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CHAPTER ONE

INTRODUCTION

CHAPTER ONE – INTRODUCTION

LAW

Water Code Section 10610-10610.4

10610. This part shall be known and may be cited as the "Urban Water Management Planning Act."

10610.2 The Legislature finds and declares…:

…This part is intended to provide assistance to water agencies in carrying out their long-term resource planning responsibilities to ensure adequate water supplies to meet existing and future demands for water.

10610.4 The Legislature finds and declares that it is the policy of the state as follows:

(a) The management of urban water demands and efficient use of water shall be actively pursued to protect both the people of the state and their water resources.

(b) The management of urban water demands and efficient use of urban water supplies shall be a guiding criterion in public decisions.

(c) Urban water suppliers shall be required to develop water management plans to actively pursue the efficient use of available supplies.

1.1 The Urban Water Management Planning Act

The California Urban Water Management Planning Act (UWMPA) of 1983 established a management policy for the demand and efficient use of urban water, as outlined in the California Water Code Division 6, Part 2.6, Section 10610-10657. In accordance with the UWMPA, all urban water suppliers providing water to more than 3,000 customers or more than 3,000 acre-feet of water per year are required to submit or update their Urban Water Management Plan (UWMP) every five years to the Department of Water Resources. Since Exeter's Water System Master Plan of September 2008 determined that the City has more than 3,000 connections, the City of Exeter is an urban water supplier subject to preparing an UWMP. This report constitutes the 2010 UWMP for the City of Exeter.

The Code requires that a UWMP must include historic, current and future supplies and demands for water; address conservation measures, and describe potential supply deficiencies during drought conditions and the ability to mitigate these conditions; compare total projected water use and water supply sources over 20 years in 5-year increments, for a single dry water year and for multiple dry water years; and provisions for recycled water use, demand management measures, and a water shortage contingency plan. A copy of the governing Code sections is included in Appendix A hereto; pertinent excerpts therefrom precede and are included in the Chapters in this UWMP.

In addition to some changes in the UWMPA since the last UWMPs were submitted in 2005, Governor Schwarzenegger established his 20x2020 Plan. This Plan determines that for California to continue to have enough water to support its growing population, the State needs to reduce the amount of water each person uses per day (Per Capita Daily Consumption, which is measured in gallons per capita per day). This reduction of 20 percent per capita use by the year 2020 is supported by legislation passed in November 2009, SB x 7_7 (Steinberg) Water conservation. As a result new law changes have amended and repealed some sections of the Water Code and affect our reporting requirements under the UWMPA and other government codes.

1.2 Previous City Urban Water Management Plans

In September of 2009, the City of Exeter exceeded 3,000 water service connections and thus triggered the state requirement to submit an UWMP. The City of Exeter submitted the 2005 UWMP on September 21, 2009 to the Department of Water Resources (DWR). After several state reviews and re-submissions, the City of Exeter received DWR approval of the City's 2005 UWMP on January 27, 2011.

1.3 Background of Water Supply in Exeter

The City of Exeter came into existence 1888 as a development along the Southern Pacific Railroad. Development of water resources aided in the growth of the agricultural and ranching industries. In 1900 Frank Teague started a water system consisting of a shallow well and an elevated tank near the center of town. Exeter was incorporated in 1911 and started water service to the community with two wells and an elevated 100,000 gallon tank for storage. This tank is still in use. As the city has grown, the water supply system has been improved and enlarged. In 1975 Quad Consultants prepared a Master Plan for the City of Exeter Water System. At that time the City had a population of about 5,000 and had 4 deep wells, the original elevated 100,000 gallon tank and two ground level 200,000 gallon tanks supplying groundwater to its customers. Two of those wells have been taken out of production and five new wells have been constructed and brought on line. Two of the production wells, E5W and E6W, require public notification before use due to DBCP contamination. An elevated 100,000 gallon tank and four hydropneumatic tanks provide storage and pressure regulation. Groundwater remains the sole source of water to the City.

The intent of this plan is to ensure that groundwater remains an adequate source of water for the City without the need of importing water from other locations. In line with these goals, this plan monitors water production demands and encourages water conservations practices.

1.4 Public Participation, Plan Adoption

LAW

10642. Each urban water supplier shall encourage the active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan. Prior to adopting a plan, the urban water supplier shall make the plan available for public inspection and shall hold a public hearing thereon. Prior to the hearing, notice of the time and place of hearing shall be published…After the hearing, the plan shall be adopted as prepared or as modified after the hearing.

In accordance with the UWMPA, the City plans to hold a public hearing regarding the 2010 UWMP for Council consideration. Fourteen days prior to Council consideration, a notice of the public hearing will be published in the local newspaper to notify interested parties that the Draft 2010 UWMP is available at various City facilities for review. A copy of the public notice is located in Appendix T. [Checklist #55/56, §10642]

After Council and public comments have been addressed, the Council will adopt a Final Draft UWMP for submittal to the Department of Water Resources (DWR) for Review. A copy of the proposed resolution adopting Final Draft UWMP is located in Appendix J. Once approved the adopting resolution will be added in Appendix Q. [Checklist #57, §10642]

After the submittal to the DWR, the City will submit a copy of the UWMP to the California State Library and to local pertinent agencies within 30 days. The UWMP distribution plan is located in Appendix U. [Checklist #54/59, §10635(b), §10644(a)]

After the submittal to DWR, the City will make the Final Draft UWMP available for public review at the City Hall within 30 days as required by §10645. [Checklist #60, §10645]

Once the Final Draft UWMP has addressed the DWR comments and has been approved by DWR, the resulting Final UWMP will then replace the Final Draft UWMP and will be made available from the City Hall upon request.

The City will utilize the conceptual timeline that is located in Appendix U as a guide for UWMP implementation. [Checklist #58, §10643]

1.5 UWMP Amendments

LAW

10641(c). The amendments to, or changes in, the plan shall be adopted and filed in the manner set forth in Article 3 (commencing with Section 10640).

Any amendments or changes to the final UWMP will be incorporated into a revised UWMP and available from the City Hall upon request. There are no current amendments to the UWMP. [Checklist #7, §10621(c)]

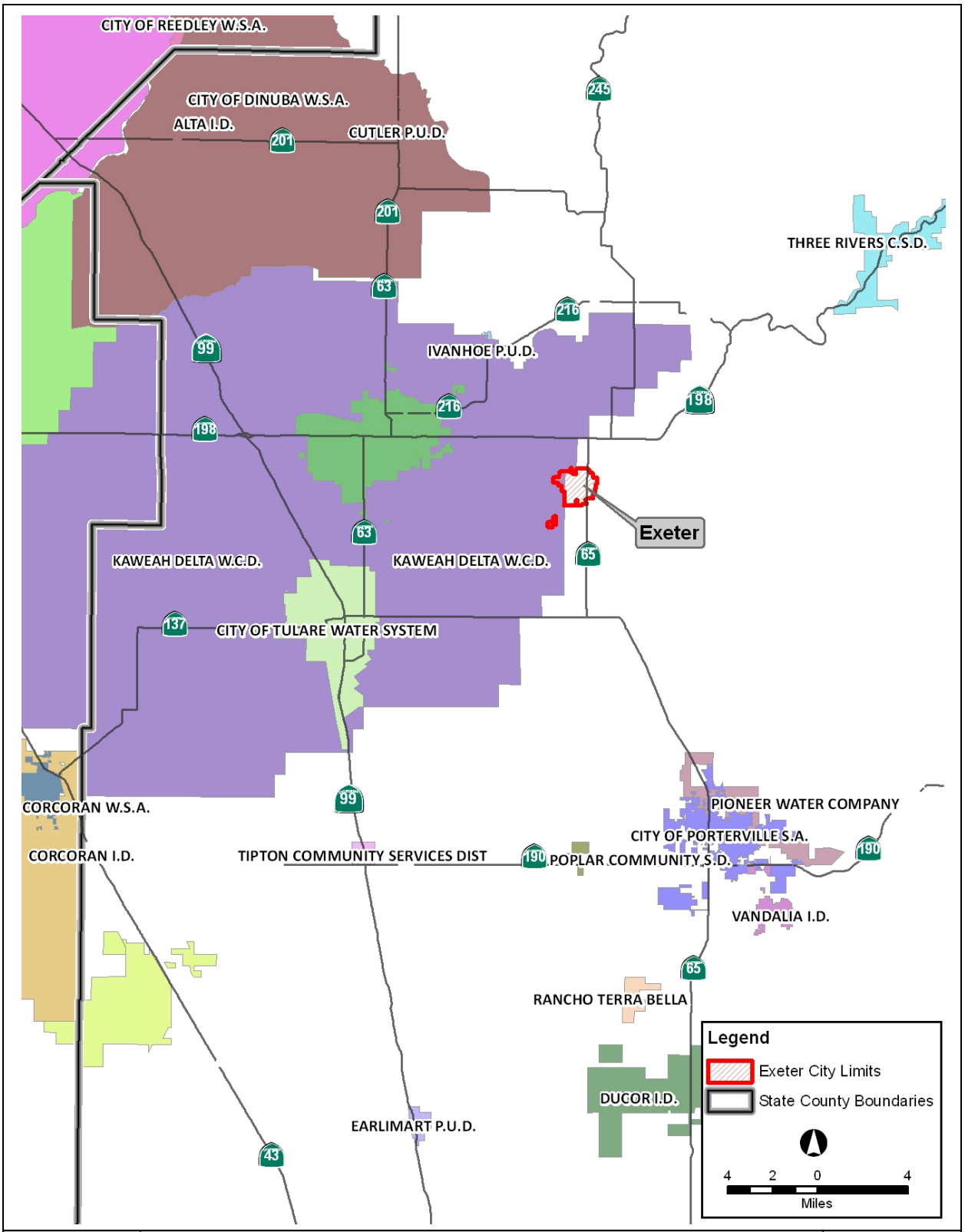
1.6 Agency Coordination

LAW

10620 (d) (2). Each urban water supplier shall coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.

The City of Exeter 2010 UWMP is intended to address those aspects of the Act which are under the control of the City, specifically water supply and water use. While preparing the 2010 UWMP, the City coordinated its efforts with relevant local agencies to ensure that the data and issues are presented accurately. The City has furnished copies of the draft Plan to and requested comments by Kaweah Delta Water Conservation District. Although the City is not included within District boundaries (see Figure 1-1) they are adjacent to the City and their activities affect the groundwater basin from which the City draws its water supply. Additionally, the City contacted the Department of Water Resources (DWR) to discuss the requirements of the UWMPA and obtain a checklist and other guidelines. [Checklist #4, §10620(d)(2)]

The City previously coordinated with the Tulare County Water Commission and the nearby Kaweah Delta Water Conservation District during the development of the 2005 UWMP that DWR recently approved in January 2011. Since then, the City has had continued conservations with these local agencies during the development of the 2010 UWMP. Through the continued interagency coordination over the past year and with consultation of DWR, the City has met the 60 day local agency notification as required by §10621(b). [Checklist #6, §10621(b)]



Quad Knopf

WATER DISTRICT BOUNDARIES
TULARE COUNTY
And a portion of Kings and Fresno Counties

Figure 1.1-1

CHAPTER TWO

SERVICE AREA

CHAPTER TWO – SERVICE AREA

The City's existing water facilities, and the recent history of their development, are described in Section 1.2 of Chapter One of this Plan.

2.1 Location

The City of Exeter is located in Tulare County approximately 180 miles north of Los Angeles and 240 miles southeast of San Francisco. The City is situated south of the intersection of State Highway 198 and State Highway 65 (see Figure 2.1-1).

2.2 Climate

The climate of the Exeter area is characteristic of that of the Southern San Joaquin Valley. The summer climate is hot and dry, while winters are cool and periodically humid. Historical climate records for the City of Exeter provide a hundred year average annual rainfall of 11 inches. For other most recent climatic data, we are referring to National Oceanic and Atmospheric Administration's (NOAA) weather station data in the city of Lindsay (See Appendix N). This is the closest NOAA weather station to Exeter and should provide similar climatic data. The mean daily maximum temperatures range from a low of approximately 46.0 degrees F in December and January to a high of about 79.4 degrees F in July. Rainfall is generally concentrated during the six months from November to April. The wettest month is March with an average rainfall of 2.57 inches. December and January typically experience heavy fog, mostly nocturnal, caused when moist cool air is trapped in the valley by high pressure systems. In extreme cases, this fog may last continuously for two or three weeks. The fog depth is usually less than 3,000 feet.

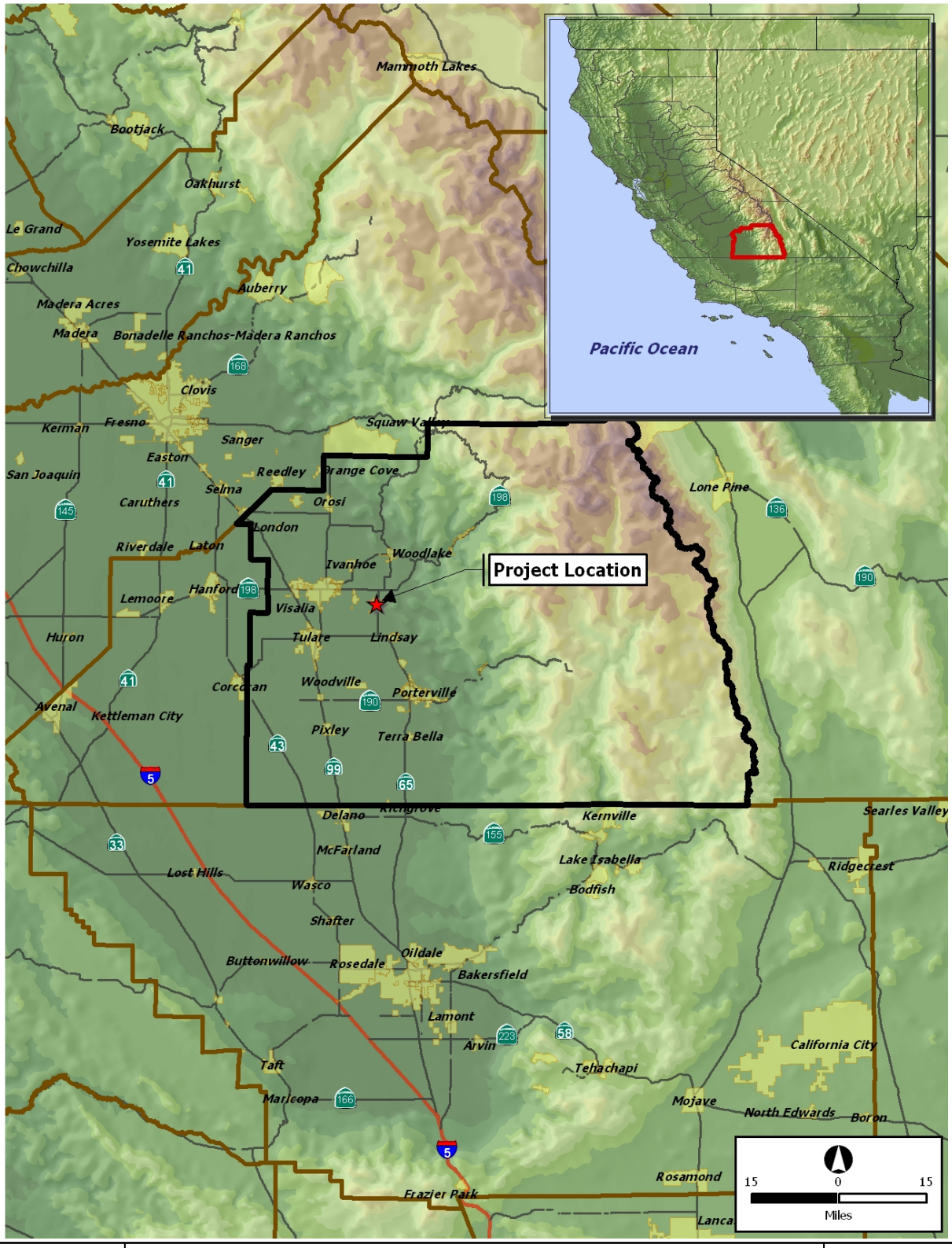
The Valley area is subject to characteristic seasonal air flows. During the summer, air currents from the Pacific Ocean enter the Valley through the San Francisco Bay and Delta region and are forced down the valley. These air movements are primarily to the southeast at velocities of six to ten miles per hour. During the winter, cold air flowing off the surrounding mountains results in currents toward the northwest at velocities ranging from zero to five miles per hour. These airflows result in extensive horizontal mixing of air masses in the Valley. However, vertical dispersion is constrained by temperature inversions, an increase in air temperature in a stable atmospheric layer, which may occur throughout the year. [Checklist #9, §10631(a)]

Climatic data pertinent to system operation and design are summarized as follows:

Table 2.2-1
Climate

	Jan	**Feb**	**Mar**	**Apr**	**May**	**June**	
Average Precipitation (inches)	2.44	2.25	2.57	0.90	0.41	0.13	
Average Temperature (Fahrenheit)	47.0	51.8	55.8	61.0	67.8	74.6	
	July	**Aug**	**Sept**	**Oct**	**Nov**	**Dec**	**Annual**
Average Precipitation (inches)	0.00	0.02	0.34	0.66	1.33	1.45	12.51
Average Temperature (Fahrenheit)	79.4	78.0	73.0	64.0	52.7	46.0	62.6

Reference: NOAA, Lindsay weather station, 9.0 miles SE of Exeter, 30 year Averages from 1971-2000



Quad Knopf	REGIONAL LOCATION	Figure 2.1-1

2.3 Land Use

The Land Use Element of the City's General Plan depicts the Urban Development Boundary Line and the Urban Area Boundary Line for the community. This map is included in Appendix B. In 2005 the City adopted the Southwest Exeter Specific Plan which redefined the Urban Development Boundary Line. A map showing the updates to the General Plan, based on the Southwest Exeter Specific Plan and other growth areas, is included in Appendix C and is referred to as the Growth Constraints Map.

It is evident from the inspection of the Land Use Element from the 2020 General Plan, the 2025 Southwest Specific Plan and other growth areas that:

a) There are only 60 acres inside the 10-year annexation line.

b) The developable area within the adopted urban development boundary, approximately 425 acres, can accommodate growth for another ten years.

c) With limitations still persistent with respect to agricultural preserves, the location of development within the urban area boundary line is difficult to predict.

In view of the above, the Water System Master Plan will be designed to:

a) Serve future growth to the Southwest within the existing City Limits

b) Serve future growth to the Northwest within the existing City Limits.

c) Serve future growth within the "in-fill" area within the existing City Limits.

d) Serve the City to 2020 and accommodate approximately 12,450 people.

2.4 Projected Population

Based on the Southwest Specific Plan and other growth areas in the community, the following numbers were projected by the City in 2005:

Table 2.4-1
City Developed Population Projections

Year	Population (1.88% growth rate)	Population (2.88% growth rate)
2000	9,168	9,168
2001	9,340	9,432
2002	9,516	9,704
2003	9,695	9,983
2004	9,877	10,271
2005	10,063	10,566
2006	10,252	10,871
2007	10,445	11,184
2008	10,641	11,506
2009	10,841	11,837
2010	11,045	12,178
2011	11,253	12,529
2012	11,464	12,890
2013	11,680	13,261
2014	11,899	13,643
2015	12,123	14,036
2016	12,351	14,440
2017	12,583	14,856
2018	12,820	15,284
2019	13,061	15,724
2020	13,306	16,177
2021	13,556	16,643
2022	13,811	17,122
2023	14,071	17,615
2024	14,335	18,123
2025	14,605	18,645
2026	14,879	19,182
2027	15,159	19,734
2028	15,444	20,302
2029	15,734	20,887
2030	16,030	21,489
2035	17,595	24,766
2040	19,312	28,544

Table 2.4-2
City Developed Population Projections

Actual Population (US Census Bureau)*	2010 Projections (1.88% growth rate)
9,185	-
9,278	-
9,424	-
9,600	-
9,681	-
9,788	-
9,904	-
9,873	-
9,875	-
9,973	-
10,334	-
-	10,528
-	10,726
-	10,928
-	11,133
-	11,343
-	11,556
-	11,773
-	11,994
-	12,220
-	12,450
-	12,684
-	12,922
-	13,165
-	13,413
-	13,665
-	13,922
-	14,183
-	14,450
-	14,722
-	14,988
-	16,462
-	18,069

* Reference: US Census Bureau Data based on 2009 Population Estimates Data Set, 04/06/2009, Populations for 2000 & 2010 from U.S. Census Bureau Counts during those respective years.

The population in 2009 was 9,973 showing a slower rate of growth compared to the projected numbers from the 2005 Southwest Specific plan (See Table 2.4-1). In December of 2007, the US economy slid into a recession altering the value of homes and ultimately the projected growth rates of the area. For the 10-year period between the years 2000 and 2009, Exeter's estimated population growth rate has not exceeded a growth rate of 1.88%. Additionally, if you take the actual census populations from 2000 and 2010, you find the average growth rate of 1.18% over the ten year

period. For the purposes of this report and future planning, we conservatively estimate the population growth using the lower previously projected growth rate starting at the census population count from 2010. (See Table 2.4-2) [Checklist #11, §10631(a)]

2.5 Service Area Boundaries

The City of Exeter's water system serves only the incorporated area of the City. The City does not sell water to any other agencies nor to any water users outside the City's corporate limits. (See Figure 2.5-1) [Checklist #8, §10631(a)]

2.6 Service Area Demographics

The City provides water to the residents living and business operating within the City's corporate limits. A breakdown of the City of Exeter's demographics is provided below. [Checklist #12, §10631(a)]

CA - Exeter city

Population

Total Population	10,334

Housing Status
(in housing units unless noted)

Total	3,600
Occupied	3,378
Owner-occupied	2,036
Population in owner-occupied (number of individuals)	6,111
Renter-occupied	1,342
Population in renter-occupied (number of individuals)	4,150
Households with individuals under 18	1,394
Vacant	222
Vacant: for rent	91
Vacant: for sale	71
Vacant: for seasonal/recreational/occasional use	10

Population by Sex/Age

Male	5,020
Female	5,314
Under 18	3,285
18 & over	7,049
20 - 24	720
25 - 34	1,353
35 - 49	1,846
50 - 64	1,642
65 & over	1,188

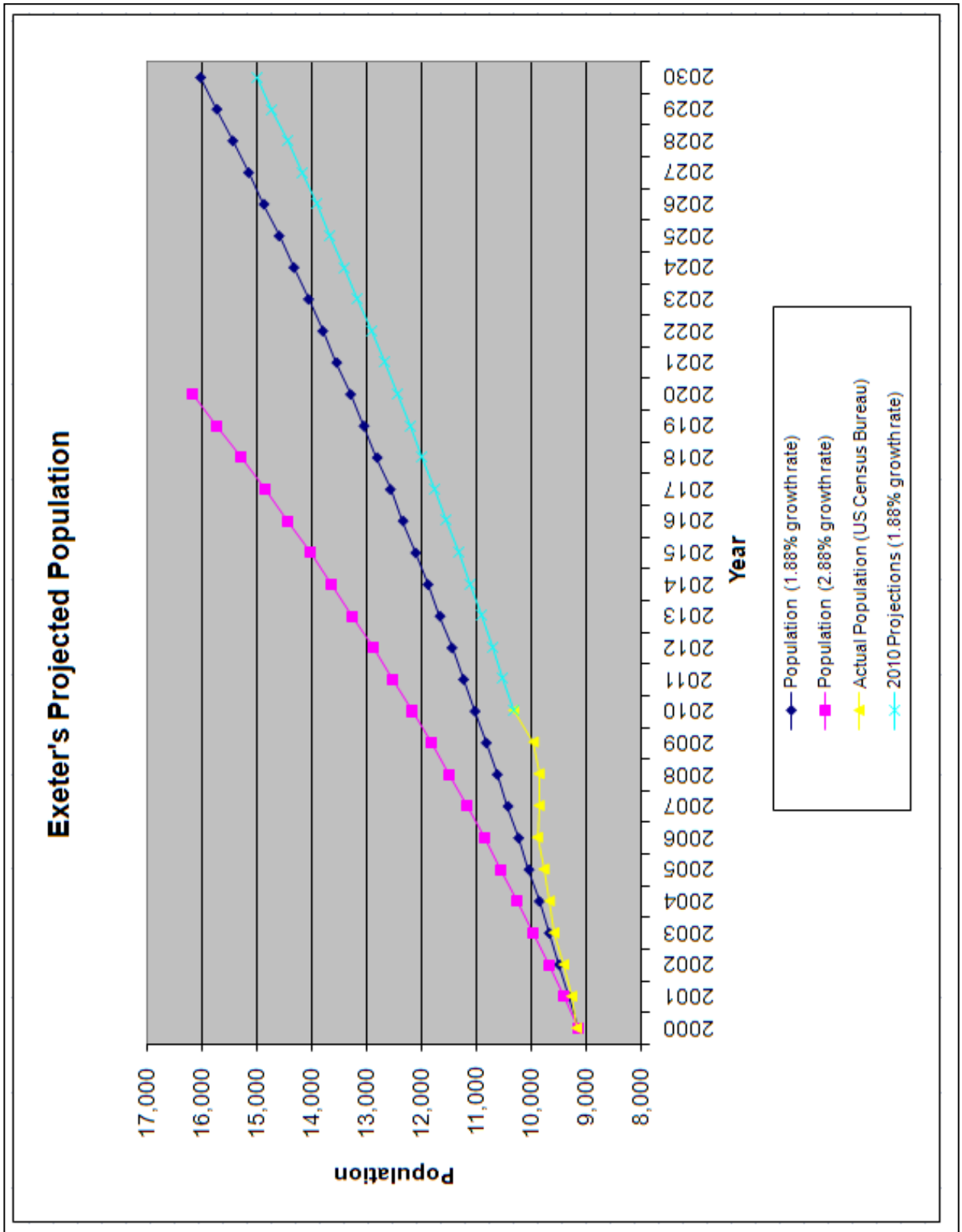
Population by Ethnicity

Hispanic or Latino	4,703
Non Hispanic or Latino	5,631

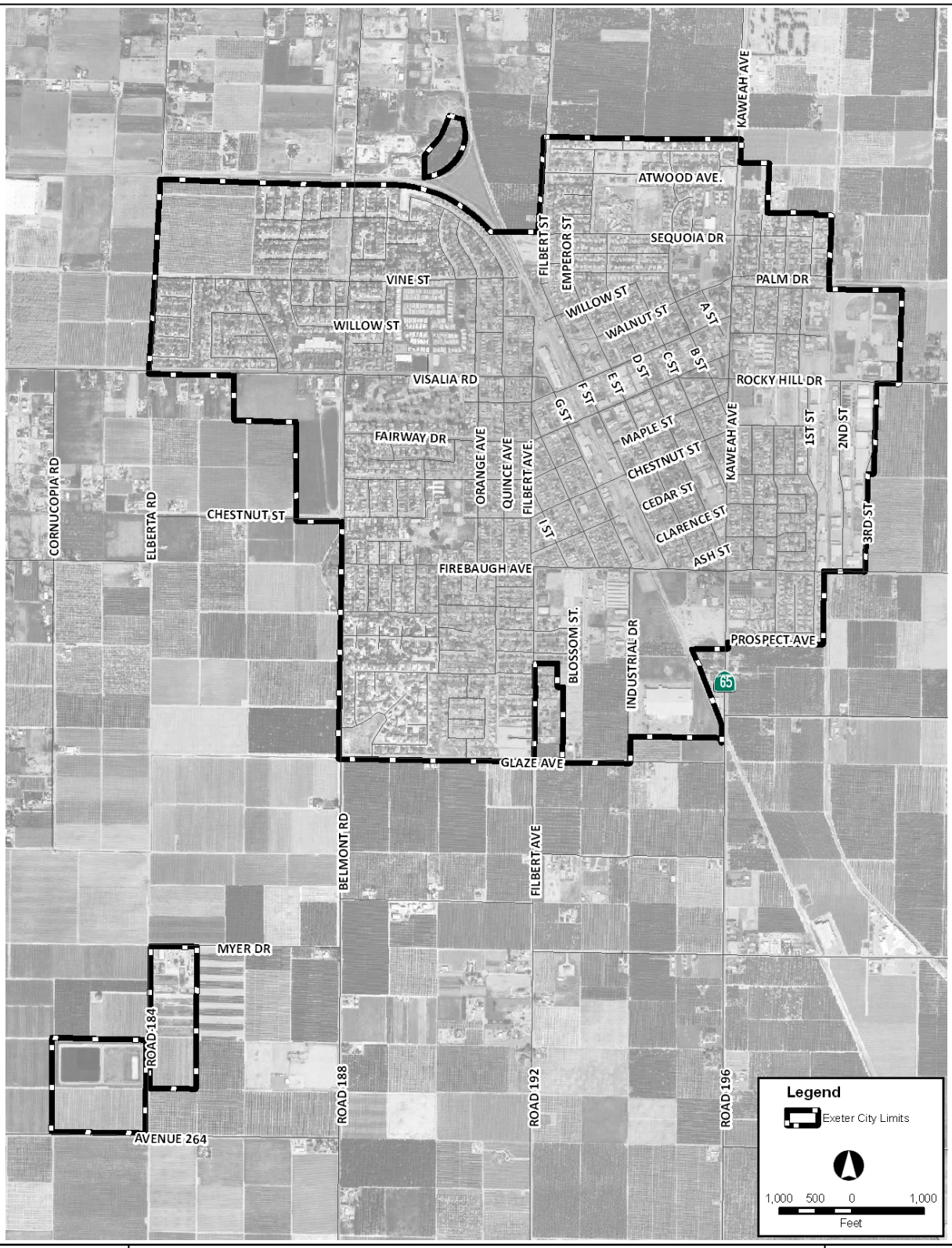
Population by Race

White	7,150
African American	67
Asian	138
AIAN	171
NHPI	8
Other	2,416
Identified by two or more	384

Reference: US Census Bureau 2010 Interactive Population Map. http://2010.census.gov (Please note that the federal data appears to have a discrepancy between the total population and the populations listed for owner-occupied and renter-occupied. The data suggests a population of 73 homeless)



Quad Knopf	POPULATION PROJECTIONS, 2000-2030	Figure 2.4-1



Quad Knopf

EXETER CITY LIMITS

Figure 2.5-1

CHAPTER THREE

WATER SUPPLY

CHAPTER THREE – WATER SUPPLY

LAW

10631(b). Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments described in subdivision (a)… Provide:

(1) A copy of any groundwater management plan adopted by the urban water supplier.

(2) A description of any groundwater basin or basins from which the urban water supplier pumps groundwater… information as to whether the department has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted …and a detailed description of the efforts being undertaken by the urban water supplier to eliminate the long-term overdraft condition.

(3) A detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years.

(4) A detailed description and analysis of the amount and location of groundwater that is protected to be pumped by the urban water supplier.

3.1 Water Supply System

3.1.1 WATER SOURCES

The City currently utilizes local groundwater as its sole source of water supply. No natural surface water sources exist. Some private surface water sources, namely irrigation district canals, pass through the City, but are not intended for urban use. Irrigation canals are dedicated for agricultural uses. Currently, the City does not utilize recycled water and storm water as water sources. Desalinated seawater or brackish ground water are not viable water source options. [Checklist #14, §10631(b)]

3.1.2 SYSTEM FACILITIES

The City's municipal water system extracts its water supply from underground aquifers utilizing eight active groundwater wells within the City (Figure 3.1-1). The pumping capacities of the City wells are shown on Table 3.1-1. The City's distribution system consists of a grid work of over forty-three miles of mains whose sizes range from six (6) inches to twelve (12) inches in diameter. Due largely to a major pipe replacement project in 2004, the City's four (4) inch service water mains are now a minimum of six (6) and eight (8) inch diameter C-900 PVC pipes.

3.1.3 SYSTEM OPERATION

The largest storage facility is the 100,000 gallon elevated storage tank located at the intersection of Kaweah Avenue and Pine Avenue. Well pumps are controlled by pressure switches that regulate the "on/off" status of the pumps. These pressure settings were developed by the City staff for

turning the pumps on and off to maintain an average City-wide pressure during varying demands. The low settings will turn the pumps on to maintain a constant safe operating pressure throughout the system, while the high settings will turn the pumps off to prevent high pressures from damaging distribution mains, their appurtenances, and plumbing fixtures at customers' residences and offices. The wells are regulated by the RUGID computer at the elevated storage tank site. The trigger for which a well will be pumping is determined by the water level in the storage tank. The RUGID computer is currently programmed to use Well E12W first and E11W last. During the winter months, water demand is low and the City typically operates six wells. During summer months, additional wells are turned on to help meet increased demand. Well E6W is primarily a peak demand, standby, production well. Since well E6W has a history of chemical contamination from DBCP, public notification is required when used.

3.2 Water Storage

The system's pressure regulation and storage needs are provided by a 100,000-gallon elevated steel tank located at Pine and Kaweah Avenues, in the central area of the City. In addition to the elevated storage tank, three hydropneumatic tanks (located at wells E11W, E12W and E13W) provide a volume of 5,000 gallons, 5,430 gallons, and 5,000 gallons respectively.

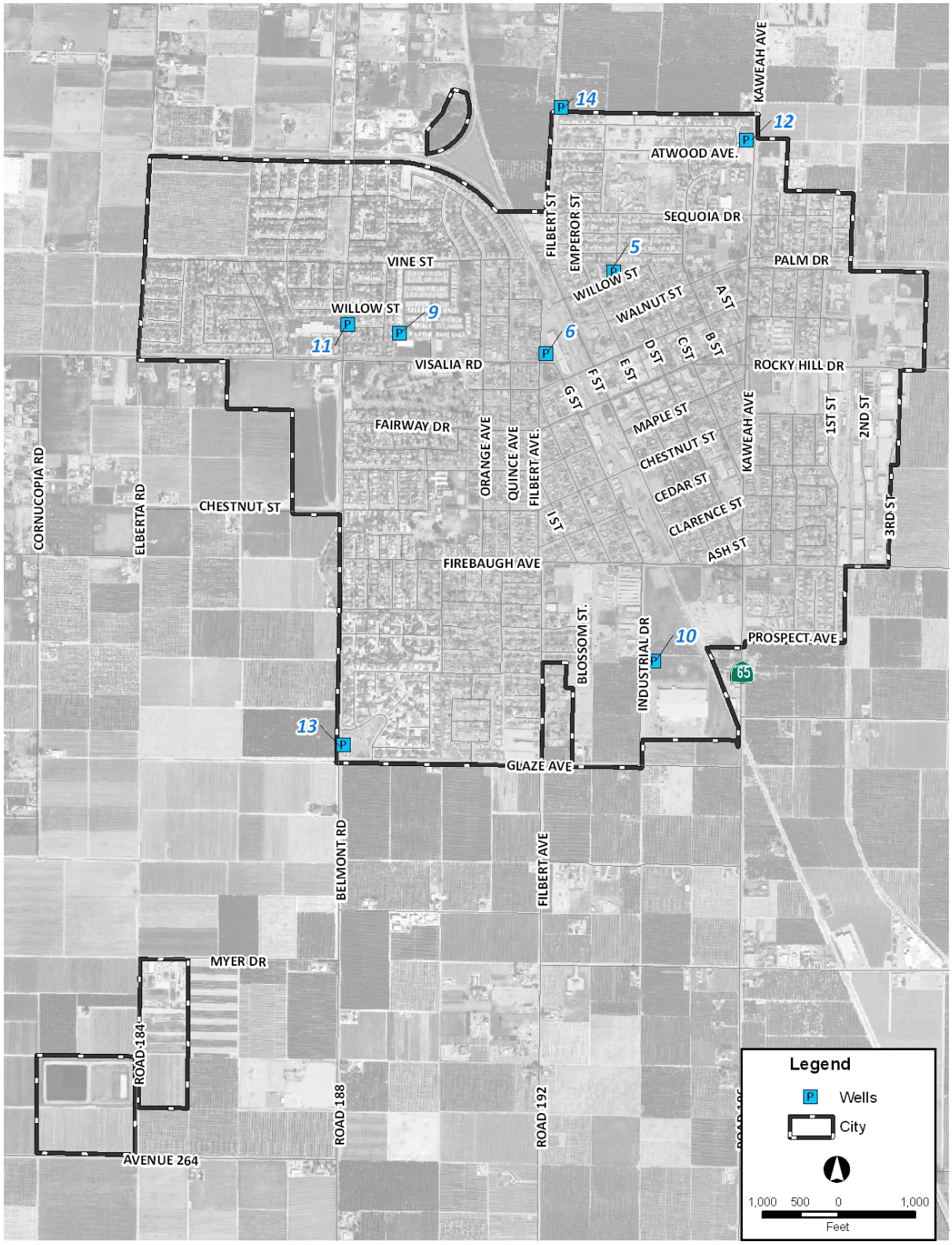
3.3 Groundwater Basin

The groundwater subbasin underlying the City is the Tulare Lake Basin, which is part of the Tulare Lake Hydrologic Region (Figure 3.3-1). This region contains multiple interconnected subbasins that transmit, filter, and store water: the Kings, Kern, Kaweah, Tulare Lake, Tule, Westside, and Pleasant Valley subbasins. The City of Exeter is located within the Kaweah subbasin.

The Tulare Lake Basin is not an adjudicated groundwater basin, as defined by the California Water Plan Update, Bulletin 160-98, Figure 3-28 on page 3-54 and Table 3-16 page 3-55. [Checklist #17, §10631(b)(2)]

The California Water Plan Update, Bulletin 160-98 page 3-50, Table 3-15, lists the 1995 overdraft for the Tulare Lake Hydrologic Region at 820 thousand acre feet (taf). As shown in Table 3-15, groundwater overdraft is expected to decline to 670 taf during 2020. [Checklist #19, 10631(b)(2)]

During dry periods, water levels in the subbasins may decline. However, during wet periods, most of them recover.



Quad Knopf

WELL LOCATIONS

Figure 3.1-1

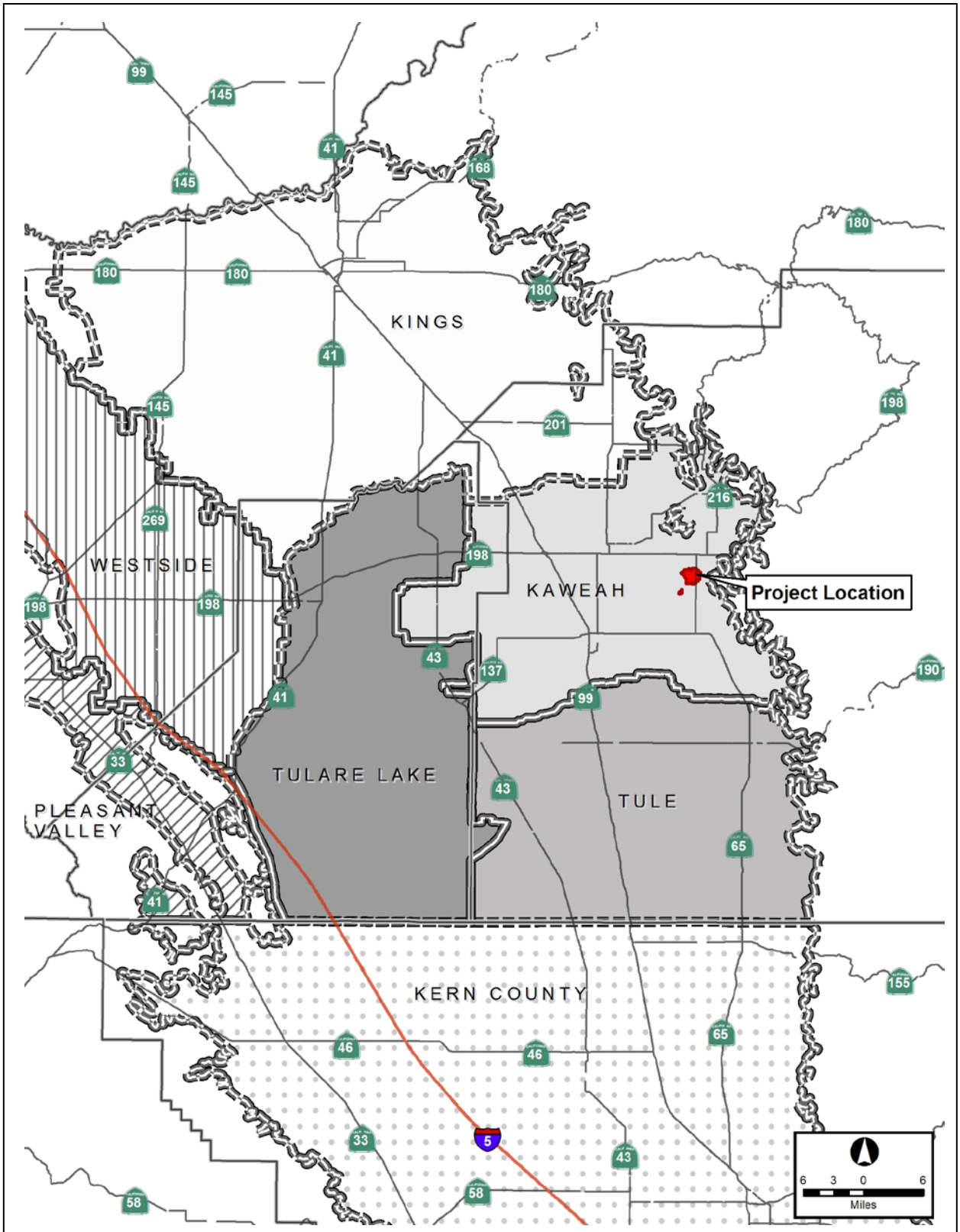
Table 3.1-1
Water Supply Wells

Well No.	Location	H.P.	Well Capacity (gpm)	Depth (ft)	Water Level Static (ft)	Water Level Pumping (ft)	Back-up Power Supply
5*	Willow Street east of D Street	75	1,183	634	-	-	None
6*	Intersection of G Street and Palm Street in a park	75	1,130	420	62	78.3	None
9	West of Albert Ave and North of Visalia Rd.	75	794	296	89.4	100.2	Diesel Generator
10	East side of Industrial Dr, midway between Firebaugh Ave. and Glaze Ave.	125	1,452	430	84.9	94	Propane Generator
11	West of Belmont Ave. and north of Visalia Rd.	75	1,051	430	79	105.8	Propane Generator
12	West side of Highway 65 at northern boundary of City in northeaster part of the City.	100	250	620	108	327.8	None
13	Near the Intersection of Glaze Ave. and Belmont St.	150	1,500	580	83	106.3	Diesel Generator
14	Near the Intersection of Atwood Ave. and N Filbert Road	100	550	555	78	315	None

			Avg. Well Depth (ft)	Avg. Static Level (ft)	Avg. Pumping Level (ft)
Total	(all wells)	7,910			
Total	(w/o best producing well – w/o E13W)	6,410			
Total	(w/o Public Notification needed – w/o E5W & E6W)	5,597			
Total	(w/o best producing well and Public Notification – w/o E5W, E6W, & E13W)	4,097	495	83	161

Reference: Table 4-1, Historical Well Production, and Table 4-2, Well Capacities and Characteristics, of the Exeter Water System Master Plan, September 2008.

***NOTES:**
Well No 5 is currently inactive.
Well No 6 is currently used for a backup water supply.



Quad Knopf	SUBBASINS, KAWEAH HYDROLOGIC REGION	Figure 3.3-1

3.3.1 BASIN BOUNDARIES AND CHARACTERISTICS

The City of Exeter is geographically located within the Kaweah Subbasin which is located in the southern portion of the San Joaquin Valley Groundwater Basin. The southern portion of the valley is internally drained by the Kings, Kaweah, and Tule Rivers that flow into the Tulare drainage basin.

The Kaweah Subbasin lies between the Kings Groundwater Subbasin on the north, the Tule Groundwater Subbasin on the south, crystalline bedrock of the Sierra Nevada foothills on the east, and the Kings River Conservation District to the west. The subbasin generally comprises lands in the Kaweah Delta Water Conservation District. Major rivers and streams in the subbasin include the Kaweah and St. Johns Rivers. The Kaweah River is the primary source of recharge to the area. Average annual precipitation is seven to thirteen inches, increasing eastward.

The total storage capacity of the Kaweah Subbasin is estimated to be 15,400,000 acre-feet to a depth of 300 feet and 107,000,000 acre-feet to the base of fresh groundwater. These calculations were calculated using an estimated specific yield of 10.8 percent and water levels collected by DWR and cooperators. These same calculations give an estimate amount of subbasin groundwater supply in 1995 to be 11,600,000 acre-feet of groundwater to a depth of 300 feet.[1]

The subbasin information provided above was derived from California's Groundwater Bulletin 118 dated 02/27/2004. The Bulletin was prepared by the State Department of Water Resources and is provided in Appendix D for further reference. [Checklist #16, §10631(b)(2)]

3.3.2 GROUNDWATER MANAGEMENT PLANS

The City of Exeter is located within the Kaweah subbasin. Generally, the groundwater within this subbasin is managed by the Kaweah Delta Water Conservation District (District). The District has adopted a Groundwater Management Plan (Plan) for the subbasin. Each year the District prepares an annual report on the Plan. The latest report is the 2008 Annual GWMP Report and is included in Appendix E. This Plan pertains to the geographic region that surrounds the City of Exeter. Although the District does not regulate groundwater within the City limits of Exeter, the District's Plan is considered when the City evaluates plan affecting local groundwater. [Checklist #15, §10631(b)(1)]

3.3.3 GROUNDWATER MANAGEMENT ACTIVITIES

Groundwater management activities within the Kaweah Subbasin are conducted and coordinated by a number of agencies. The main agency that coordinates with the various groups that affect groundwater in the area is the Kaweah Delta Water Conservation District. The County of Tulare's General Plan update, the Water Conservation District and City of Visalia's groundwater modeling projects, the 2008 Annual Groundwater Management Plan Meeting are all activities that demonstrate coordinated planning and management of groundwater resources in the Kaweah Basin.

[1] California's Groundwater Bulletin 118 – Appendix D

Other groups that affect groundwater levels and usage in the Exeter area include Consolidated People's Ditch Company (People's) and Exeter Irrigation District (EID). Both groups own, maintain and operate irrigation networks near and within the City of Exeter. The EID's facilities within the City boundaries consist of a pipe network. Since it is a closed system, there is no direct exchange of waters between the City and the EID. However, People's does operate open canals within the City limits and accepts an agreed amount of municipal storm water. The City enjoys a close and cooperative relationship with both of these groups.

3.3.4 AGREEMENT WITH LOCAL IRRIGATION GROUPS

The City of Exeter (City) currently has a surface water agreement with the Consolidated People's Ditch Company (People's). The City is allowed to discharge a limited amount of storm water into the People's ditch network in exchange for a fee to cover maintenance. People's have several open water networks that within the City's boundaries. There are no formal agreements regarding surface water between the City and the Exeter Irrigation District (EID). The EID has only closed pipe systems that run through the City's boundary.

3.3.5 CITY SUPPLY WELLS

The City currently has six active water supply wells and two standbys. Each well has a vertical turbine pump; individual pump output varies from a low of 250 gallons per minute (gpm) to a high of 1,500+gpm. The City has a total of eight wells (E5W, E6W, E9W, E10W, E11W, E12W, E13W, and E14W) which are located throughout the City (Table 3.1-1). The use of two of the wells (E5W and E6W) requires public notification because of a history of chemical contamination from Dibromochloropropane (DBCP). Well E5W has been inactive for many years and E6W is used only during the peak water usage period in the summer.

The eight total wells a have a total supply capacity of 7910gpm. The total supply capacity without requiring public notification, meaning the removal of wells E5W and E6W from the total, is 5597gpm. The firm capacity, which is defined as the total capacity less one of the largest wells out of service (E13W), is approximately 6410gpm. The firm capacity without requiring public notification is 4097gpm. The City's water system has no current interconnections to any other water system.

3.3.6 GROUNDWATER LEVELS

The City of Exeter's overall static water level varies in different areas of the City, but presently ranges from around 60 to 100 feet (Table 3.1-1). This compares favorably to the historic water levels. The depth to groundwater in the late 1960's was approximately 80 feet.

Groundwater levels over the entire Kaweah Subbasin are monitored by the Department of Water Resources (DWR). Changes in groundwater levels are based on annual water level measurements by DWR and cooperators. Water level changes were evaluated by Quarter Township and computed through a custom DWR computer program using geostatistics (kriging). On average, the subbasin water level has declined about 12 feet from 1970 through 2000. The period from 1970 through 1978 showed steep declines totaling about 25 feet. The ten-year period

from 1978 to 1988 saw stabilization and rebound of about 50 feet, bringing water levels above the 1970 water level by 25 feet. 1988 through 1995 again showed steep declines, bottoming out in 1995 at nearly 35 feet below the 1970 level. Water levels then rose about 22 feet from 1996 to 2000, bringing water levels to approximately 12 feet below 1970 levels.[2]

3.4 Water Supply Projections

In determining the adequacy of water supply facilities, the source must be large enough to meet varying water demand conditions, as well as provide sufficient water during potential emergencies such as power outages and natural disasters. There are no currently planned future water supply programs other than the continued development of the City's groundwater supply. Groundwater has been a consistent and reliable source of water throughout the recorded history on the area. The level of water supply is anticipated to be consistent with the values shown on Figure 3.4-1. [Checklist #52, §10634] There is no need for, and there are no opportunities for, surface water treatment facilities. [Checklist #30, §10631(h)]

3.4.1 NORMAL PRODUCTION CAPACITY

In accordance with industry standard practices and the California Department of Health Services (DHS) criteria for "Adequate Source Capacity" regarding water supply, the source should be sized to serve the Maximum Day Demand (MDD). On the day of maximum demand, it is desirable to maintain a water supply rate equal to the MDD rate. For the purposes of analysis, the most recent average per capita consumption rate of 235gpcd[3] based on the calculations for a Base Daily Per Capita Water Use for a ten to fifteen year period. Water required for peak hour demands or for fireflows can come from storage or additional pumping.

3.4.2 STANDBY PRODUCTION CAPACITY

Standby production capacity is required for system reliability. Under normal operating conditions, it is possible that one or two of the City's wells can be out of service during MDD conditions due to equipment malfunction, for servicing, or for water quality concerns. The DHS criteria recommend calculating the system capacity with the largest well being out of service. To mitigate the potential impact of lost production capabilities, the City should thus have wells with a capacity of 1,500gpm (E13W) in surplus of MDD demand.

Using the DHS recommended calculations and the highest flow rates of the past 5 years; the City's MDD was approximately 2,740gpm in 2007.[4] Additionally, Fire Flow Requirements (FFR) add a demand of 1,500gpm. The total MDD with FFR is 4,240gpm. The current supply availability of 5,597gpm[5] is able to handle these demands. Although the recommended supply availability considers the largest well being out of service and drops supply to only 4,097gpm, in the event of a major fire the City plans to activate back up well, E6W. This brings the available

[2] California's Groundwater Bulletin 118 – Appendix D
[3] Historical Water Production, Table 5.1-4
[4] Calculated from Historical Water Production, Table 5.1-1; Calculations shown in Section 5.1.1
[5] Water Supply Wells, Table 3.1-1

supply to 5,227gpm and therefore exceeds the design demands of the system running at its peak while addressing a major fire at the same time.

3.4.3 FUTURE GROUNDWATER SUPPLY CAPACITY

An adequate source of supply for the City will consist of groundwater wells with a combined production capacity that continues to meet the MDD, in addition to a standby well production capacity of 1500gpm. The projected yearly water supply through the planning horizon of 2040 is shown in Table 3.4-1 and graphically in Figure 3.4-1.

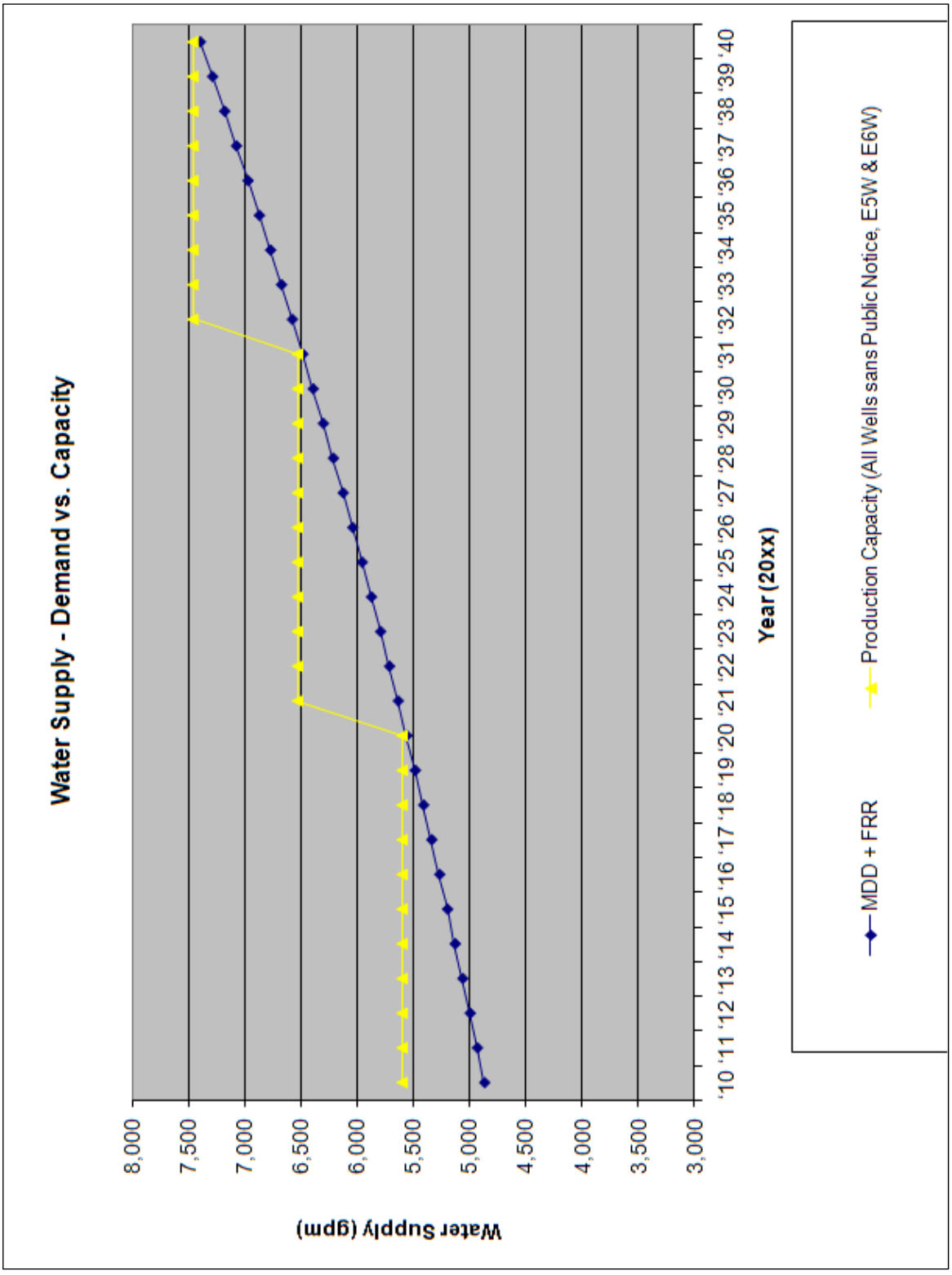
The City will place in service additional in-City wells as required to meet MDD. The average production capacity of the wells in operation is roughly 930gpm. For the purposes of projection and planning, we assume any additional well will provide equal to or exceeding 930gpm of capacity.

The existing water supply currently meets the total water demand, MDD plus FFR. The need for additional service wells are not anticipated until 2020, 2032 as shown on Figure 3.4-1. [Checklist #13, §10631(b)]

Table 3.4-1
Current and Projected Maximum Daily Water Demands and Water Supply Capacity Needs, gallons per minute (gpm)
[Checklist #21, §10631(b)(4)]

	Years (20xx)									
	'11	'12	'13	'14	'15	'16	'17	'18	'19	'20
Demand[6] w/ FRR[7]	4,936	5,001	5,067	5,134	5,202	5,272	5,343	5,415	5,488	5,563
Production Capacity[8]	5,597	5,597	5,597	5,597	5,597	5,597	5,597	5,597	5,597	5,597
	'21	'22	'23	'24	'25	'26	'27	'28	'29	'30
Demand w/ FRR	5,640	5,718	5,797	5,878	5,960	6,044	6,129	6,216	6,305	6,395
Production Capacity	6,527	6,527	6,527	6,527	6,527	6,527	6,527	6,527	6,527	6,527
	'31	'32	'33	'34	'35	'36	'37	'38	'39	'40
Demand w/ FRR	6,487	6,581	6,677	6,774	6,873	6,974	7,077	7,182	7,289	7,398
Production Capacity	6,527	7,457	7,457	7,457	7,457	7,457	7,457	7,457	7,457	7,457

[6] Demand = Maximum Daily Demand
[7] FFR = Fire Flow Requirement, 1500 gpm
[8] Capacity = Total well capacity w/o requiring public notice (Wells 5 & 6 excluded) Anticipates adding future wells.



Quad Knopf

EXETER WATER SUPPLY
DEMAND AND CAPACITY QUANTITIES

Figure
3.4-1

CHAPTER FOUR

RELIABILITY PLANNING

CHAPTER FOUR – RELIABILITY PLANNING

LAW

10631. A plan shall be adopted in accordance with this chapter and shall do all of the following:

10631 (c) Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage, to the extent practicable.

10631 (c) For any water source that may not be available at a consistent level of use, given specific legal, environmental, water quality or climatic factors, describe plans to replace that source with alternative sources or water demand management measures, to the extent practicable.

10631 (c) Provide data for each of the following: (1) An average water year, (2) A single dry water year, (3) Multiple dry water years.

10632. The plan shall provide an urban water shortage contingency analysis which includes each of the following elements which are within the authority of the urban water supplied:

(a) Stages of action to be undertaken by the urban water supplier in response to water supply, and an outline of specific water supply conditions which are applicable to each stage.

(b) An estimate of the minimum water supply available during each of the next three water years based on the driest three-year historic sequence for the agency's water supply

(c) Actions to be undertaken by the urban water supplier to prepare for, and implement during, a catastrophic interruption of water supplies including, but not limited to, a regional power outage, an earthquake, or other disaster.

(d) Additional mandatory prohibitions against specific water use practices during water shortages, including, but not limited to, prohibiting the use of potable water for street cleaning.

(e) Consumption reduction methods in the most restrictive stages. Each urban water supplier may use any type of consumption reduction methods in its water shortage contingency analysis that would reduce water use, are appropriate for its area, and have the ability to achieve a water use reduction consistent with up to a 50 percent reduction in water supply.

(f) Penalties or charges for excessive use, where applicable.

(g) An analysis of the impacts of each of the actions and conditions described in subdivisions (a) to (f), inclusive, on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts, such as the development of reserves and rate adjustments.

(h) A draft water shortage contingency resolution or ordinance.

(i) A mechanism for determining actual reductions in water use pursuant to the urban water shortage contingency analysis.

4.1 Water Supply Reliability

Two aspects of supply reliability are considered for both near-term needs (present to 2030) and long term needs (beyond 2030). The first relates to emergency reliability needs and is primarily a function of the availability and adequacy of supply facilities. The second aspect is climate-related, and involves the availability of water during mild or severe dry periods. [Checklist #53, §10635(a)]

4.1.1 STANDBY PRODUCTION

As described in the previous chapter, standby production capacity is required for system reliability. Under normal operating conditions, it is possible that one or two of the City's wells can be out of service during maximum day demand conditions due to equipment malfunction, servicing, or water quality concerns.

The California Department of Health Services (DHS) criteria recommends counting the capacity of the largest well as out of service. Well 13 has the largest capacity producing 1,500 gallons per minute (gpm). To mitigate the potential impact of lost production capabilities, the City should thus have wells with a capacity of 1,500 gpm in surplus of the maximum daily demand (MDD) requirements.

Using the DHS recommended calculations and the highest flow rates of the past 5 years; the City's MDD was approximately 2,740gpm (3,946 kgpd) in 2007.[6] Additionally, Fire Flow Requirements (FFR) add a demand of 1,500gpm. The total MDD with FFR is 4,240gpm. The current supply availability of 5,597gpm[7] is able to handle these demands. Although the recommended supply availability considers the largest well being out of service and drops supply to only 4,097gpm, in the event of a major fire the City plans to activate back up well, E6W. This brings the available supply to 5,227gpm and, therefore, exceeds the design demands of the system running at its peak while addressing a major fire at the same time.

Currently, the City's water supply is adequate to meet the immediate demands of the community, but the City's total available water capacity will be insufficient to meet the State recommended design capacities for the community in the future. The recommended design capacity factors in the possibility of a large fire and the loss of the largest producing well. The City needs to increase the water supply capacity to include redundancy provisions for standby production and source reliability.

[6] Calculated from Historical Water Production, Table 5.1-1; Calculations shown in Section 5.1.1
[7] Water Supply Wells, Table 3.1-1

4.1.2 CLIMATE-RELATED RELIABILITY CONCERNS

Not all hydrologic dry years lead to water supply shortages and groundwater overdraft. The annual quantity of groundwater available to the City does not vary significantly in relation to wet or dry years. During extended dry periods, groundwater levels generally decline, and will require more aggressive demand management practices. The reliability of the City's water supply, however, has remained consistent despite seasonal or climatic changes.

The City of Exeter has never suffered a severe water shortage. The nature of the groundwater supply is such that a sudden shortage is extremely unlikely. Any shortage that may be experienced will be due to failure to plan for increased demand due to population and industrial growth, or from catastrophic well or equipment failure.

4.2 Groundwater Quality Reliability Concerns

LAW

10634. The plan shall include information, to the extent practicable, relating to the quality of existing sources of water available to the supplier over the same five-year increments as described in subdivision (a) of Section 10631 and the manner in which water quality affects management strategies and supply reliability.

4.2.1 EXISTING WATER QUALITY REGULATIONS

In 1974, the Safe Drinking Water Act (SDWA) gave the United States Environmental Protection Agency (EPA) the authorization to set drinking water standards for contaminants in the drinking water supplies. Under the provisions or the SDWA, the California Department of Health Services (DHS) (recently renamed the Department of Public Health) has the primary enforcement responsibility. Appendix G includes a summary of the current (2007) maximum contaminant levels and regulatory dates enforced by DHS.

4.2.2 EXISTING LOCAL GROUNDWATER QUALITY

Historically the water quality in Exeter's wells has been very good and has consistently met drinking water standards. Water samples collected on May 31, 2007 are used to provide a snapshot of Exeter's water quality. Five wells, E6W, E9W, E10W, E11W, and E12W were sampled. The general water quality is good with pH values from 7.6 to 8.3 and specific conductance values ranging from 450 to 680. The sample from E12W is classified as moderately hard, all the other samples were in the hard or very hard classifications. Heavy metals were detected occasionally, i.e. iron and copper in E6W and barium in E6W, E9W and E10W (all below MCLs). Arsenic was detected in wells E11W and E12W. The arsenic concentrations, 2.5 parts per billion (ppb) in E11W and 3.5 ppb in E12W, are well below the arsenic standard of 10 ppb.[8]

[8] Existing Groundwater quality information derived from the 2008 Exeter Water System Master Plan

In 1994 levels of Dibromochloropropane (DBCP), a pesticide used to combat nematodes in agriculture in years past, began showing up in concentrations exceeding the maximum contaminant level (MCL) in well E10W. In 1995 the concentrations dropped below the MCL and E10W was returned to service. In 2000, concentrations of DBCP in well E9W exceeded the MCL. In August 2001 the levels dropped below the MCL. Then, in 2003, well E6W showed concentrations of DBCP exceeding the MCL. In the past, E6W has been used to meet summer peak demands, but only after public notification. However, with the addition of Well E13W, the use of E6W has been unnecessary. With sufficient availability of wells with good water quality, there are no projected supply changes due to water quality.

The water quality report for 2006 is attached in Appendix H of this report. Additional information can be found in the Water Permit No. 03-12-05P-005, written by the Department of Health Services in 2005. A copy of this report is on file with the City of Exeter Department of Public Works. Some recently enacted rules are included in the following subsections.

4.2.3 ARSENIC RULE

Arsenic is a constituent of many foods such as meat, fish, poultry, grain and cereals. Excessive amounts of arsenic can cause acute gastrointestinal damage and cardiac damage. Starting January 23, 2006, the Arsenic Federal MCL was set at 10 ppb. The City has recently tested the Arsenic levels and is below the new Federal mandated level.

4.2.4 STAGE 1 DISINFECTION/DISINFECTION BY-PRODUCTS RULE (D/DBPR)

Due to the City's population surpassing 10,000 persons, Stage 1 Disinfection/Disinfection By-products rule has become effective for the City of Exeter. This rule was enacted in 1998 and became effective in January, 2002. Stage 1 limits are as follows:

Total Trihalomethanes (TTHMs)	- 80 ug/L
Haloacetic Acids (HAAs)	- 60 ug/L
Bromate	- 10 ug/L
Chlorite	- 1.0 mg/L

The following residual disinfectant levels have been established to limit the applied dose of chlorine, chloramines and chlorine dioxide during drinking water treatment:

Chlorine	- 4.0 mg/L
Chloramines	- 4.0 mg/L
Chlorine Dioxide	- 0.8 mg/L

The City has recently tested these levels and is below the Federal mandated level.

4.2.5 STAGE 2 DISINFECTION/DISINFECTION BY-PRODUCTS RULE (D/DBPR)

Stage 2 Disinfection/Disinfection By-products Rule consists of monitoring chloroform at 0.070 mg/L, require public water systems to conduct a yearlong initial

distribution system evaluation to identify monitoring sites with peak DBP levels, require public water systems to comply with 80/60 TTHM/HAA standards at each well site and raise the TTHM/HAA limits to 120/100 temporarily to allow time for utilities to make adjustments to come into compliance with the 80/60 TTHM/HAA standards.

4.2.6 LEAD AND COPPER RULE (LCR)

The objective of the LCR is to minimize the corrosion of lead and copper containing plumbing materials in public water systems by requiring utilities to optimize treatment for corrosion control. The LCR establishes action levels in lieu of MCLs for regulating the levels for both lead and copper in drinking water. The action level for lead was established at 0.015 mg/L and for copper is 1.3 mg/L. An action level is exceeded when greater than 10 percent of the samples collected from the sampling pool contain lead levels above 0.015 mg/L or copper levels above 1.3 mg/L. Once the action levels have been exceeded, an action level is required by the public water system to reduce lead and copper corrosion. The City of Exeter's lead and copper levels were at non-detectable levels in the year 2007, well below the action level.

4.2.7 FUTURE EFFORTS

To reduce water quality problems, future well locations should be undertaken in general accord with the following procedures:

- Employ a qualified hydrogeologist to tentatively locate a site.

- Drill a test well, under the direction of the hydrogeologist, to evaluate well potential for production and to, through sampling and testing, predict water quality and quantity from penetrated aquifers.

4.3 Catastrophic Interruption Concerns

Such concerns have been identified by the Water Code (Section 1063(c)) as involving regional power outages, earthquakes or other disasters. In any such case, the City's water supply system should be capable of providing, as a minimum, the average daily demand (ADD) through emergency power. Emergency power could be in the form of dual power, direct engine driven pumps or engine-generator sets.

The City's existing water system has two propane-powered engine driven pumps, wells E10W and E11W, and two diesel powered engine driven pumps, wells E9W and E13W. With the addition of the standby power at each of these wells, the wells are capable of producing 4,797gpm. The total storage requirements for this scenario are shown in Table 4-3.1. It is evident, with this scenario, that no additional auxiliary power sources will be needed for emergency requirements.

Table 4-3.1
Emergency Water Supply Flow Rates

Year	Average Daily Demand, ADD (gpm)	Capacity with Backup Power Sources (gpm)
2006	1,661	4,797
2007	1,583	4,797
2010	1,686	4,797
2015	1,851	4,797
2020	2,032	4,797
2025	2,230	4,797
2030	2,448	4,797

(1) ADD for 2006 and 2007 are derived from Table 5.1-1
(2) ADD for 2010, 2015, and 2020 are derived from Table 2.4-2 and Section 5.1.1
(3) Capacity values are derived from Table 3.1-1

4.4 Future Water System Planning

4.4.1 FUTURE GROUNDWATER WELLS

Limitations with respect to the development of additional water supply from the underground aquifers in the immediate area of Exeter include those associated with both quality and quantity. DBCP contamination is of concern throughout the community. This contamination concern lessens towards the southerly and westerly portion of the City. Thus, the City is looking to depend upon the southern and western sectors to provide its long-term water supply needs.

4.4.2 FUTURE USE OF SURFACE WATER

Using surface water in terms of developing a long-term water supply are limited. Surface water in the Kaweah River system as well as the Friant-Kern Canal is fully appropriated, primarily by agricultural users. There is, however, the potential for the City to buy surface water rights as individual farmers in the surrounding area take land out of production and convert it to other uses, or wish to sell for some other reason.

There are disadvantages to reliance upon surface water for Exeter's municipal water supply. The Friant-Kern Canal is periodically shut down for maintenance and wells must be relied upon during such shutdown periods. Other surface water supplies may be subject to supply limitations during dry periods. The City's limited financial resources make the acquisition of some types of surface water rights difficult, even if they are available. Surface water treatment facility construction and operation is costly; dependent upon its point of supply, transport to the City's system would involve significant capital investment. In short, long-term reliance upon surface water supply is not considered an approach which should be considered at this time.

Operating a surface water treatment plant would add a few other Federal and State mandated water quality requirements. Those requirements are listed as follows:

- Surface Water Treatment Rule
  Monitors turbidity, Giardia lamblia, viruses, Legionella and heterotrophic plate count bacteria in U.S. drinking water.
- Long Term 1 Enhanced Surface Water Treatment Rule (LT1ESWTR)
  Include filtering of the surface water to reduce levels of Giardia and Cryptosporidium
- Long Term 2 Enhanced Surface Water Treatment Rule (LT2ESWTR)
- Filter Backwash Rule

4.4.3 FUTURE PROGRAM PLANNING

As a result of the amendments of the Safe Water Drinking Act, source water protection has become a greater national priority. The amendments require a more comprehensive water shed based prevention approach to be applied to improving and preserving water quality of the public water supply source. The State of California has established a Source Water Assessment and Protection (DWSAP) Program in order to provide guidance to local communities better protect their water resources. The key elements of the program are as follows:

- Delineate the boundaries of the areas providing source water for public water supply systems.
- Inventory of the sources of regulated and certain unregulated contaminants of concern within the delineated areas.
- Determine the vulnerability of each water source to contamination.
- Public education and outreach.

The program could ultimately lead to the development of a comprehensive prevention and protection program that include monitoring.

Current plans for future water programming include monitoring water needs and the installation of new wells as needed. No projected improvements are needed until 2020 per figure 3.4-1.

CHAPTER FIVE

WATER USE

CHAPTER FIVE – WATER USE

LAW

10631. A plan shall be adopted in accordance with this chapter and shall do all of the following:

10631 (b)(3) A detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic records.

10631 (e) (1) Quantify, to the extent records are available, past and current water use, over the same five-year increments described in subdivision (a), and projected water use, identifying the uses among water use sectors including, but not necessarily limited to, all of the following uses:

A) Single-family residential; (B) Multifamily; (C) Commercial; (D) Industrial; (E) Institutional and government; (F) Landscape; (G) Sales to other agencies; (H) Saline water intrusion barriers, groundwater recharge, or conjunctive use, or any combination thereof; and (I) Agricultural.

B) The water use projections shall be in the same 5-year increments to 20 years or as far as data is available.

5.1 Past, Current, and Projected Water Use

5.1.1 HISTORICAL WATER USE

The City provides potable water service to its residential, commercial, industrial, and institutional customers within the City limits. In 2007, the City produced approximately 831.9 million gallons or 2553 acre-feet (af) which is equivalent to an average 2.28 million gallons per day (mgd) of water servicing a population of approximately 9,873.

The total gallons of water used per year since 1996 is summarized in Table 5.1-1. For a complete summary by year and month see Appendix I. From 1996-2007 the per capita usage varied from a high of 251 gallons per day in 1996 to a low of 217 gallons per day in 1998.

Reflections on how different climatic conditions affect water use can be seen in Tables 5.1-3, 5.1-4, and 5.1-5. These tables reflect water usage during a single dry water year, average water years, and multiple dry water years. [Checklist #22, §10631(c)(1)]

Table 5.1-1
Historical Water Production

Year	Population	Total Water Production (G)	Average Flow Per Minute (gpm)	Average Daily Demand (gpd)	Maximum Daily Demand (gpd)	Maximum to Average Day Ratio	Average Per Capita Consumption (gpcd)
1996	8,370	767,360,090	1,460	2,102,356	3,495,338	1.66	251
1997	8,493	776,055,352	1,477	2,126,179	3,319,619	1.56	250
1998	8,618	681,093,700	1,296	1,866,010	3,356,181	1.80	217
1999	8,733	768,144,300	1,461	2,104,505	3,361,442	1.60	241
2000	9,185	769,648,502	1,464	2,108,626	3,339,561	1.58	230
2001	9,278	806,939,800	1,535	2,210,794	3,517,971	1.59	238
2002	9,424	812,679,300	1,546	2,226,519	3,656,013	1.64	236
2003	9,600	826,082,400	1,572	2,263,239	3,835,245	1.69	236
2004	9,681	861,745,156	1,640	2,360,946	3,820,223	1.62	244
2005	9,788	834,656,900	1,588	2,286,731	3,852,329	1.68	234
2006	9,904	873,240,304	1,661	2,392,439	4,028,887	1.68	242
2007	9,873	831,900,510	1,583	2,279,179	3,946,845	1.73	231
				Average Flow Ratio:		**1.65**	

(1) Population from U.S. Census Data. *2000 population comes from US Census Count, 2001-2007 are based on a 2009 estimate based on 2000 counts.
(2) Total Water Production and Maximum Daily Flow from field data
(3) All other columns are derived from data provided in (1) and (2)

From the previous Chapter 3, Table 3-1.1 depicts the current capacities and characteristics for all eight wells. As shown, the wells can produce a total of 5,597gpm without the use of Well E6W. In 2007, the Average Flow Per Minute was 1,583gpm, which is well under the level of capacity. The maximum daily flow in 2007 was 2,741 gpm that is also under the level of capacity. [Checklist #20, §10631(b)(3)]

It should be noted that the current water levels compare favorably to the historic water levels. The depth to ground water in the late 1960s was approximately 80 feet. Table 3-1.1 shows the overall ground water level averaging 83 feet in depth ground water depth. Five of the seven wells are within 10 feet of 1960 levels and one of the seven wells has a ground water depth of 62 feet.

5.1.2 CURRENT WATER SERVICE CONNECTIONS

The City of Exeter requires metering of all public, domestic, commercial and industrial water connections. Table 5.1-2 summarizes the City's water service connections as of the end of 2007.

Data regarding the distribution of water use among domestic, commercial and small industrial water connections has been estimated for this report by the City Finance and engineering staff. The City's 2007 total water usage is 831.9 MGY (2553 acre feet).

Table 5.1-2
Water Service Connections

	Total
Residential	2,988
Commercial	269
Industrial	19
Total Active Connections[9]	3,276

5.1.3 WATER PEAKING FACTORS

Water peaking factors are significantly valuable in analyzing a water system to determine future water consumption values. The peaking factor is the ratio of the maximum flow to the average daily flow in a water system. The peaking factor is a concept used in the drinking water industry for nearly 100 years.

Definitions for the peaking factors relevant to this analysis are as follows.

AVERAGE DAILY DEMAND (ADD)

The Average Daily Demand is typically computed using historical water usage.

For this analysis, the projected ADD was determined using the most current average per capita consumption of water as shown in Table 5.1-1.

MAXIMUM DAILY DEMAND (MDD)

The maximum day demand (MDD) represents the maximum consumption during any one day of the year. The maximum day peaking factor is expressed as a ratio of the maximum day demand divided by the ADD. The ratio generally ranges from 1.2 for very large water systems to 3.0 or even higher for specific small systems.

For the City of Exeter, the single day with the maximum water consumption normally occurs during the hottest month of the year. In general, the maximum day flow is 2.0 or 2.5 times greater than the average annual demand. The historical MDD found in Table 5.1-1 shows the average flow ratio from 1996 to 2007 to be 1.65. For this study, a conservative flow ratio value of 2.0 is used to determine future MDD values.

Maximum Day Demand = 2.0 x Average Day Demand

[9] Exeter 2008 Water System Master Plan – All connections are metered

PEAK HOUR DEMAND (PHD)

The maximum flow rate delivered by the distribution system on any single hour during the year corresponds to the peak hour water demand. The peak hour demand (PHD) is the peak hour water demand divided by the average daily demand (ADD). Peak hour demands typically occur during the morning hours. In the absence of historical peak hour water flows, a peak hour demand of 3.0 to 3.5 may be used. For this study a PHD of 3.0 is used.

Peak Hour Demand = 3.0 x Average Day Demand

The values for the ADD, PHD and MDD are shown in Table 4-3 (Appendix F) for each year based on the future population projections described in subsection 5.1.5.

5.1.4 PAST, CURRENT, AND PROJECTED PER-CAPITA CONSUMPTION

The per capita consumption rate is used for estimating the City's future water requirements, evaluating the adequacy of the supply source, and determining storage needs. The consumption rate, expressed in gallons per capita per day (gpcd), is applied to the projected population to yield future water requirements. Utilizing the 2010 UWMP Methodologies, the **Base Daily per Capita Water Use** is calculated as **235gpcd**[10]. This value represents the consumption rate to be used to estimate future water requirements of the City based on a 10-15 year cycle. As shown in Table 5.1-4, the corresponding **urban water use target** is **188gpcd**[11] for year 2020. The **interim base water use target** is **212gpcd**[12] for year 2015. [Checklist #20, §10631(b)(3)]

5.1.5 PROJECTED WATER USE

Based on future trends in population provided by the US Census Bureau and the most recent per capita water consumption rate of 235gpcd, the City's future water requirements are estimated and summarized in Table 5.1-6. In addition to the projected average daily demands (ADD), Table 5.1-6 includes 5 year estimates for MDD, through the planning horizon year of 2040. Based on these projections, it is anticipated that the City's average day and maximum day requirements for 2040 (w/o targeted reductions) will be over 4.2 MGD (2,946 gallons per minute (gpm)) and 8.5 MGD (5,893 gpm), respectively.

[10] Refer to Table 5.1-4.
[11] The target urban water use value is determined by determining a 20% reduction in water use for the determined base daily per capita water use over a ten year period. Additionally, this target water usage should also reduce water usage below a 5% reduction in water use for the determined base daily per capita over a five year period. For a numeric representation of the target urban water use, refer to table 5.1-4.
[12] Refer to Table 5.1-5.

Table 5.1-3
Base Daily Per Capita Water Use Calculation (5 year cycle)[13]

Base Years	Service Area Population	Gross Water Use (gallon per day)	Daily Per Capita Water Use (gallon)
2003	9,600	2,263,239	236
2004	9,681	2,360,946	244
2005	9,788	2,286,731	234
2006	9,904	2,392,439	242
2007	9,873	2,279,179	231
Base Daily Per Capita Water Use (5 yr average)			**237**
95% of Base Daily Per Capita Water Use (5 yr) 2015 Minimum Daily Per Capita Water Use			**225**

Table 5.1-4
Calculation of Urban Water Use Target (10 year cycle)[14]

Base Years	Service Area Population	Gross Water Use (gallon per day)	Daily Per Capita Water Use (gallon)
1998	8,618	1,866,010	217
1999	8,733	2,104,505	241
2000	9,185	2,108,626	230
2001	9,278	2,210,794	238
2002	9,424	2,226,519	236
2003	9,600	2,263,239	236
2004	9,681	2,360,946	244
2005	9,788	2,286,731	234
2006	9,904	2,392,439	242
2007	9,873	2,279,179	231
Base Daily Per Capita Water Use (10 yr average)			**235**
2020 Urban Water Use Target (gal/capita/day) = 80% of 10yr			**188**
2015 Min. Base Daily Per Capita Water Use (See Table 5.1-3) = 95% of 5yr			**225**

[13] Use 5 year base period for Water Use to check for legislation required 5% reduction in water use. Most recent year in base period must end no earlier than Dec 31, '07 and no later than Dec 31, '10. This 5-year period also serves as the sampling of multiple dry water years. The single dry water use for Exeter is 2007.
[14] Use 10 year base period for Water Use to check for legislation required 20% reduction in water use. Most recent year in base period must end no earlier than Dec 31, '04 and no later than Dec 31, '10.

Table 5.1-5
Interim Urban Water Use Target

Base Daily Per Capita Water Use (10 yr average)	235
2020 Urban Water Use Target (gal/capita/day)	188
Average between Base Water Usage and Target = Interim Urban Water Use Target for 2015	**212**

Table 5.1-6
Projected Average and Maximum Daily Demand (ADD & MDD)
Through 2040 (Gallons per Day) w/o target reductions[15]

	Year					
	2015	**2020**	**2025**	**2030**	**2035**	**2040**
ADD	2,665,605	2,925,750	3,211,275	3,522,180	3,868,985	4,243,160
MDD	5,331,210	5,851,500	6,422,550	7,044,360	7,737,970	8,486,320

5.2 Expansion Projects

Law

10910.(a) Any city or county that determines that a project, as defined in section 10912, is subject to the California Environmental Quality Act X shall comply with this part.

10912. For the purpose of this part, the following terms have the following meanings:

10912 (a) "Project" means any of the following:

(1) A proposed residential development of more than 500 dwelling units.
(2) A proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space.
(3) A proposed commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor space.
(4) A proposed hotel or motel, or both, having more than 500 rooms.
(5) A proposed industrial, manufacturing or processing plant, or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,00 square feet of floor area.
(6) A mixed-use project that includes one or more of the projects specified in this subdivision.
(7) A project that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500 dwelling unit project.

[15] Using projected population growth rate of 1.88% (Figure 2.4-1) and 235 gallons per day per capita consumption without the emergency Fire Flow Requirements (FFR = 1500gpm).

5.2.1 PROJECTED WATER USE

The City has no knowledge regarding any proposed projects of the sizes or water demands defined in the law given the City's size. It is unlikely that such projects will be proposed or built within the 2040 planning horizon. If so proposed, project compliance with Sections 10910 through 10914 will be required.

5.3 Water Shortage Expectations

The water use projections in Table 5.1-6 assume any potential increase in use will be offset by the increased water supply provisions. Without diversified water resources available, during a catastrophic event the City would have to rely on the importation of water from other regions by means of truck or bottled supplies. [Checklist #23, §10631(c)(2)]

5.4 Other Water Uses

The City has no, and does not anticipate having any, water uses other than those already described. The following methods to obtain water are not considered practical or needed by the City at this time. The City will reconsider utilizing these methods in the future.

- Water transfers [Checklist #24, §10631(d)];
- Water sales;
- Saline barriers;
- Desalinated water projects [Checklist #31, §10631(i)];
- Groundwater recharge; and
- Conjunctive use.

CHAPTER SIX

SUPPLY AND DEMAND COMPARISON

CHAPTER SIX – SUPPLY AND DEMAND COMPARISON

LAW

10635 (a) Every urban water supplier shall include, as part of its urban water management plan, an assessment of the reliability of its water service to its customers during normal, dry, and multiple dry water years. This water supply and demand assessment shall compare the total water supply sources available to the water supplier with the total projected water use over the next 20 years, in five-year increments, for a normal water year, a single dry water year, and multiple dry water years. The water service reliability assessment shall be based upon the information compiled pursuant to Section 10631, including available data from the state, regional, or local agency population projections within the service are a of the urban water supplier.

6.1 Supply and Demand Comparison

Comparisons of projected supplies and demands are shown in Tables 3.4-1 and 5.1-3 and on Figure 3.4-1. The City currently has the water supply capabilities to meet MDD, Fire flow demand, and to provide standby production capabilities.

As an additional safety measure, the State recommends evaluating the water supply based on the most productive well being inoperable in the event of localized failure of the water system, a regional power outage, or earthquake. The City of Exeter currently has two back up wells available in the event additional water flows are needed due to a major fire. The additional wells provide for more than enough water flow necessary to offset the loss of the City's most productive well.

The State requires a 20-year water supply outlook be provided for planning purposes. This means this 2010 UWMP should extend projections to 2030. For continuity and ease of preparation for future UWMP, projections are extended to 2040 where possible to account for delays in City adoption or State approval.

The projected demands for the planning horizon of 2030, including five-year increments from present until then, are discussed in chapter five. Table 5.1-6 indicated a total maximum demand, required supply capacity, of approximately 3,522,180 gallons per day average (3,946 acre feet per year) will be needed in year 2030.

The projected future demands are conservative and do not differentiate between varying climatic years. Realistically the domestic water use will vary from normal water years during single and multiple dry water years. Although not required, the City of Exeter can implement domestic use demand control measures in order to further protect the water supply resources. See Chapters Seven and Eight.

CHAPTER SEVEN

WATER DEMAND MANAGEMENT MEASURES

CHAPTER SEVEN – WATER DEMAND MANAGEMENT MEASURES

LAW

10631 (f) Provide a description of the supplier's water demand management measures. This description shall include all of the following:

(1) A description of each water demand management measure that is currently being implemented, or scheduled for implementation, including the steps necessary to implement any proposed measures, including, but not limited to, all of the following...

(a) Water survey programs for single-family residential and multi-family residential customers.

(b) Residential plumbing retrofit.

(c) System water audits, leak detection, and repair.

(d) Metering with commodity rates for all new connections and retrofit of existing connections.

(e) Large landscape conservation programs and incentives.

(f) High-efficiency washing machine rebate programs.

(g) Public information programs.

(h) School education programs.

(i) Conservation programs for commercial, industrial, and institutional accounts.

(j) Wholesale agency programs.

(k) Conservation pricing.

(l) Water conservation coordinator.

(m) Water waste prohibitions.

(n) Residential ultra-low-flush toilet replacement programs.

In 1991, a Memorandum of Understanding (MOU) regarding Urban Water Conservation in California formed the California Urban Water Conservation Council (CUWCC). The City is not currently a signatory of the MOU and is therefore not a member of CUWCC.

However, the City realizes the importance of Best Management Practices (BMPs) to ensure a reliable future water supply. The City is committed to implementing water conservation and water recycling programs to maximize sustainability in meeting future water needs for its customers.

The California Department of Water Resources (DWR) has termed such BMPs as Demand Management Measures (DMMs). Accordingly, this chapter will refer to them as DMMs. [Checklist #26-29, §§10631(f)(1),(3),(4),&(g)]

7.1 DMM 1 – Water Survey Programs for Single-Family Residential and Multi-Family Residential Customers

This program consists of offering water audits to residential customers. Audit components include reviewing water usage history with the customer, identifying leaks inside and outside, and recommending improvements.

It is recommended that the City initiate a program offering such audits and residential landscape audits. The City should target the largest one to five percent of single-family residential users in 2012 and 2013. A similar program for multi-family residential users will be developed in future years (2014 and 2015). Water bills would be reviewed before and after the audit is conducted to evaluate program effectiveness.

7.2 DMM 2 – Residential Plumbing Retrofit

This program consists of installing physical devices to reduce the amount of water used or to limit the amount of water, which can be served to the customer. In accordance with State Law, low flow fixtures have been required on all new construction since 1978. In addition, State legislation enacted in 1990 requires all new buildings after January 1, 1992 to install Ultra-Low Flush Toilets (ULFT).

Several studies suggest that savings resulting from miscellaneous interior retrofit fixtures can range between 25 and 65 gpd per housing unit. The studies also suggest that installation of retrofit fixtures in older single-family homes tends to produce more savings, while newer multi-family homes tend to produce fewer savings per housing unit.

Beginning in 2013 the City could undertake, in its role as a Redevelopment Agency, a City-subsidized program for residential plumbing retrofits in existing dwelling units. An annual assessment of the short-term and long-term savings from the program should be made.

7.3 DMM 3 – System Water Audits, Leak Detection, and Repair

The City's standard operations and procedures already include provisions for monitoring and maintaining the water system for leaks and other repair needs. These practices have been established prior to the 1970's. These practices include weekly inspections of the system's water well operations and observations of differences in the amounts water extracted and delivered. The effectiveness of this program is based on the comparison of water usage observations.

7.4 DMM 4 – Metering with Commodity Rates for all New Connections

This DMM recommends water meters for all new construction and billing by volume of use. This ensures all new construction will match all existing City connections that are already currently metered. Annually evaluate water production/pressure measurements to assess if any meters need further operational evaluation.

7.5 DMM 5 – Large Landscape Conservation Programs and Incentives

The City adopted the 2010 Water Efficient Landscape Ordinance in accordance with Assembly Bill 325: The Water Conservation in Landscaping Act. This ordinance limits the amount of turf in landscaping, require plant groupings according to water needs, and provide some flexibility to the landscape designer while promoting landscape efficiency. The Parks Superintendent reviews all commercial landscaping plans for compliance prior to permits being issued. The City assists with setting irrigation controller clocks for water efficiency landscape watering.

To ensure that the intent of such regulations is carried out, the applicant for a building permit is required to submit landscape plans for review to the City.

After the approved landscape is installed, it is the responsibility of the Building Department to inspect the project to confirm that the landscaping for the project was installed in accordance with the approved plans. The landscape designer certifies that the project is in compliance with these regulations by signing and submitting a completed certificate of compliance. The Building Department could authorize the deferral of landscape completion for good and valid reasons, subject to the posting of appropriate security with the City.

The City covers xeriscape landscaping within Section 8.3 of the Water Conservation Chapter of the City of Exeter Water System Master Plan. Furthermore, a list of xeriscape plants is provided in Attachment O of the City's Water System Master Plan.

7.6 DMM 6 – High–Efficiency Washing Machine Rebate Program

Rebates sponsored by the private utilities which serve the City is available to City residents who purchase a high-efficiency washing machine. An efficient washing machine can save the user up to $650 in energy and water costs over the life of the machine. To qualify, the unit must be installed with a water-heating source using natural gas distributed by Southern California Gas Company or electricity distributed by Southern California Edison. Follow the online rebate request instructions.

7.7 DMM 7 – Public Information Programs

This program consists of distributing information to the public through a variety of methods including brochures, school presentations, and web sites. The City will consider in 2012 the modification of its billing program to show previous year's water usage, and to continue that program thereafter. An average water usage per residential property can be used to assess program effectiveness.

7.8 DMM 8 – School Education Program

This DMM recommends water suppliers to implement a school education program that includes providing educational materials and instructional assistance. This could include the distribution of free publications provided by the California Department of Water Resources (DWR) and American Water Works Association (AWWA). These handouts would meet state education framework requirements. Follow-up questionnaires to teachers would assist in evaluation of program effectiveness in 2014.

7.9 DMM 9 – Conservation Programs for Commercial, Industrial, and Institutional Accounts

The City does not currently have a conservation program for commercial, industrial and institutional accounts. These accounts are currently metered and charged in accordance with the quantity of used water on an increasing rate basis for increased water usage. The City will consider, beginning in 2014, undertaking surveys and follow-up measures for its major industrial accounts and the public school system. Metered usage comparisons will provide an evaluation of program effectiveness.

7.10 DMM 10 – Wholesale Agency Programs

This DMM applies to wholesale agencies and defines a wholesaler's role in terms of financial, technical, and programmatic assistance to its retail agencies in implementing DMMs. The City is not a water wholesaler.

7.11 DMM 11 – Conservation Pricing

There are no seasonal rates; the present rate structure is an increasing rate structure that currently bills based on the volume of metered use.

Fee schedules for Exeter and other communities are included in Appendix K. Water meters are read every month, and consumers are billed monthly.

7.12 DMM 12 – Water Conservation Coordinator

The Director of Public Works is the water conservation coordinator for the City. The conservation coordinator is responsible for coordinating and expanding the City's water conservation program and providing residents with useful water conservation information.

7.13 DMM 13 – Water Waste Prohibitions

The City will develop an ordinance to prohibit and minimize water waste. This will focus on conservation efforts, water softener use, and scheduling of appropriate lawn watering times. This will be fully developed in 2013-2014. Evaluating overall City water usage or user survey will be used to determine the programs effectiveness.

7.14 DMM 14 – Residential Ultra-Low-Flush Toilet Replacement Programs

State legislation requires the installation of efficient plumbing in new construction, and effective in 1994 required that only ULFT be sold in California. Homes constructed since 1994 in the City have ULFT. The Building Department also requires that residential remodeling be accompanied by retrofitting with low-flow fixtures. The building department will begin to keep track of all relevant data for program effectiveness evaluation.

CHAPTER EIGHT

WATER SHORTAGE CONTINGENCY PLAN

CHAPTER EIGHT – WATER SHORTAGE CONTINGENCY PLAN

8.1 Stages of Actions

LAW

10632. The plan shall provide an urban water shortage contingency analysis which includes each of the following elements which are within the authority of the urban water supplier:

10632. (a) Stages of action to be undertaken by the urban water supplier in response to water supply shortages, including up to a 50 percent reduction in water supply and an outline of specific water supply conditions which are applicable to each stage.

10632. (d) Additional, mandatory prohibitions against specific water use practices during water shortages, including, but not limited to, prohibiting the use of potable water for street cleaning.

10632. (e) Consumption reduction methods in the most restrictive stages. Each urban water supplier may use any type of consumption reduction methods in its water shortage contingency analysis that would reduce water use, are appropriate for its area, and have thee ability to achieve a water use reduction consistent with up to a 50 percent reduction in water supply.

10632. (f) Penalties or charges for excessive use, where applicable.

8.1.1 WATER SHORTAGE STAGES AND REDUCTION OBJECTIVES

Supply capacity must be designed to meet MDD plus standby and thus meet demands through the planning horizon of 2030. The 2030 standby capacity, reserved for emergency conditions such as equipment malfunctions, is estimated at 86 percent (4,797gpm).[12] [Checklist #6, 10632(b)]

Water agencies relying solely on groundwater, such as the City, are much less likely to experience water shortages than those agencies relying primarily on surface water. As a good precautionary measure, this Chapter addresses water management tools and options that can be utilized to maximize resources and minimize the need to import water from other regions. [Checklist #5, §10620(f)]

8.1.2 WATER REDUCTION STAGE TRIGGERING MECHANISMS

Emergency response actions would take effect when the City Administrator declares that the City is unable to provide sufficient water supply to meet ordinary demands, to the extent that insufficient supplies would be available for human consumption, sanitation and fire protection. The declaration would be based on the City's judgment as to the degree of the immediate or future supply deficiency. Table 8.1-1 provides guidelines to assist in declaring water shortage stages. [Checklist #35, §10632(a)]

[12] Chapter 4, Reliability Planning

A combination of voluntary and mandatory water conservation measures would be used to reduce water usage in the event of water shortages.

Table 8.1-2 outlines reduction objectives for each stage.

Table 8.1-1
Guide for Declaring Water Shortage Stages

Stage	Condition
1	▪ Two or more of municipal wells out of service due to noncompliance with drinking water standards or other emergencies ▪ Warm weather patterns typical of summer months
2	▪ Prolonged periods of low water pressure ▪ Three or more of municipal wells out of service due to noncompliance with drinking water standards or other emergency ▪ Warm weather patterns typical of summer months
3	▪ Prolonged periods of low water pressure ▪ Four or more of municipal wells out of service due to noncompliance with drinking water standards or other emergency ▪ Warm weather patterns typical of summer months

Table 8.1-2
Water Usage Reduction Objectives

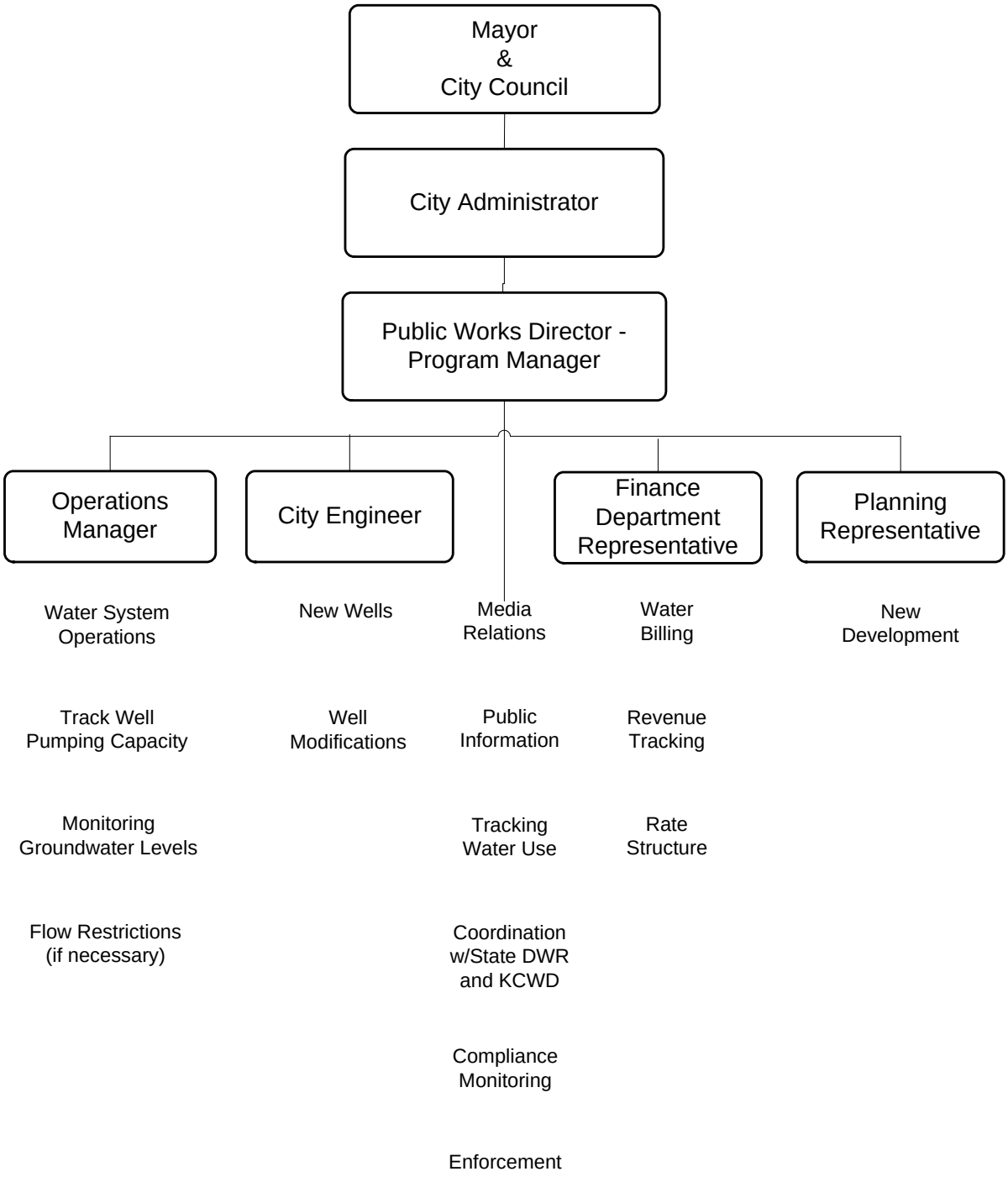
Stage	Description	Reduction Objective
1	(Minor Shortage Potential)	10-20% reduction in total water demands from baseline
2	(Moderate Shortage Potential)	20-35% reduction in total water demands from baseline
3	(Critical Shortage Potential)	35-50% reduction in total water demands from baseline

8.1.3 ADMINISTRATION OF WATER SHORTAGE PROGRAM

The administration of a water shortage program as described in this section would involve coordination among a number of City departments. It is anticipated that the Public Works Department would have primary responsibility for managing the program, since it is responsible for the City's water system. The Public Works Director would be the Program Manager and thus the primary coordinator of water shortage activities.

An appropriate organizational structure for a water shortage management team would be determined based on the actual situation. Figure 8.1-1 presents an example of a typical organization structure. Specific individuals would be designated to fill the identified roles. The City would not have to hire additional staff or outside contractors to implement the program.

Water Shortage Program Organizational Structure
Figure 8.1-1



8.1.4 ADMINISTRATIVE ELEMENTS OF WATER SHORTAGE PROGRAM

The major elements to be considered in administering and implementing the program would include: [Checklist #38 & #39, §§10632(d)&(e)]

- Identifying the City staff members to fill the key roles on the water shortage management team.

- Intensifying the public information program to provide comprehensive information on necessary actions that must be undertaken by the City and by the public. The scope of the public information program can be developed by reviewing published references, especially those published by DWR, and researching successful aspects of current programs conducted by neighboring water agencies.

- A public information hotline may be advisable to answer any questions regarding the program.

- Monitoring program effectiveness: Ongoing monitoring will be needed to track supply availability and actual water user reductions. This procedure will allow the City to continuously re-evaluate the situation and make informal decisions as to whether another reduction level is needed.

- Enforcing program requirements: For the 35 to 50 percent reduction program, enforcement of water use prohibitions and water use allocations would be important in achieving the program goals. Inspectors and enforcement personnel could be identified among City staff in the community on other business, such as police, park department staff, street maintenance staff and meter readers.

- Dealing with equity issues that might arise from the mandatory restrictions or higher water rates: Depending on the level of restriction, there may be a need to address concerns of individual customers who might have special conditions or extenuating circumstances and are unduly affected by the program. A procedure should be identified for dealing with such special requests and/or for reviewing specific accounts.

- Coordinating with other relevant local entities: Coordination, as needed, continues with the Kaweah Delta Water Conservation District, the principal water management agency near Exeter.

- Adjusting water rates: Revenues from water sales should be reviewed periodically to determine whether an increase in rates might be needed to cover revenue shortfalls due to the decrease in demand.

- Addressing new development proposals: During periods of severe water shortage, it may be necessary to impose additional requirements on new development to reduce new demand or to temporarily curtail new hook-ups.

- It is essential that the water shortage contingency plan, as a component of the Urban Water Management Plan, undergoes a formal public review process including a public

hearing. A thorough public review process will help minimize future objections when mandatory prohibitions are needed.

- Prohibit the use of potable water for street cleaning.

8.2 Water Shortage Contingency Ordinance or Resolution

LAW

10632. The plan shall provide an urban water shortage contingency analysis, which includes each of the following elements, which are within the authority of the urban water supplier.

10632. (h) A draft water shortage contingency resolution or ordinance.

A copy of the proposed adoption resolution is included in Appendix J. Thirty days prior to adoption, a notice of the public hearing will be in the local newspaper, notifying interested parties that the 2010 UWMP, including the Urban Water Shortage Contingency Plan (Contingency Plan) is available at various City facilities. The City will, after the hearing, submit the amended draft Plan to the Department of Water Resources for review and recommended corrections. The City Council will thereafter, at a properly noticed meeting, re-adopt the Plan, by resolution, as revised in accord with the recommended corrections. [Checklist #42, §10632(h)]

8.3 Mandatory Prohibitions on Water Wasting

Mandatory compliance measures enacted during a water shortage are more severe than voluntary measures, produce greater savings, and are less costly to the utility. The principal drawback to these measures is customer resentment if the measures are not seen as equitable. Therefore, such measures need to be accompanied by a good public relations campaign.

Mandatory measures may include:

- Ordinances making water waste illegal
- Ordinances controlling landscape irrigation
- Ordinances restricting non-irrigation outdoor water uses
- Prohibitions on new connections or the incorporation of new areas
- Rationing

Prohibitions on new development may conflict with other policies and needs. However, if existing customers are called upon to make sacrifices during a drought period, they may feel that water agencies should concentrate on fulfilling current obligations rather than taking on new customers. Such prohibitions may need to be considered in the event of a critical shortage, such as the 50 percent reduction program. If necessary, an offset program might be considered whereby developers demonstrate that they will implement measures to conserve at least as much water in the existing community as their new project will use. In some cases, a two to one offset might be required of the new development. The City currently enforces Municipal Code Section 13.08, Title 13. [Checklist #40, §10632(f)]

8.4 Revenue and Expenditure Impacts/Measures to Overcome Impacts

LAW

10632. The plan shall provide an urban water shortage contingency analysis which includes each of the following elements which are within the authority of the urban water supplier:

10632. (g) An analysis of the impacts of each of the actions and conditions described in subdivisions (a) to (f), inclusive, on the revenues and expenditures of the urban water supplier…

10632 (g) {An analysis of the impacts of each of the proposed measures to overcome those {revenue and expenditure impacts, such as the development of reserves and rate adjustments.

The majority of operating costs for most water agencies are fixed rather than a function of the amount of water sold. As a result, when significant conservation programs are undertaken, it is frequently necessary to raise water rates because the revenue generated is based on lower total consumption while the costs, and resulting revenue required, are basically fixed. Typically water rates need to be increased by the percentages listed in Table 8.4-1 when the indicated stages are implemented. However, reductions in water demands, especially peak demands, can delay the need to develop costly new water sources in growing communities. [Checklist #41, §10632(g)]

The City does not currently have an emergency fund but will consider establishing such a fund to mitigate the impacts of a water shortage. The fund would then be used to stabilize water rates during periods of water shortage or disasters affecting the water supplies. Excess water revenues collected as a result of shortage rate adjustments would be used to enhance the emergency fund.

Table 8.4-1
Guide for Rate Adjustment

Stage	Rate Adjustment
1	25 percent increase over pre-shortage rates
2	50 percent increase over pre-shortage rates
3	100 percent increase over pre-shortage rates
End of Water Shortage Emergency	15 percent increase over pre-shortage rates. (This rate increase is implemented based on historical information from communities that experienced water shortage and found that consumption rate (gpcd) does not return to pre-shortage levels. In anticipation of reduced sales, the City rates would be set for one year at 115 percent of the pre-shortage rates. This rate increase should be re-evaluated every two years.)

8.5 Actions during a Catastrophic Interruption

LAW

10632. The plan shall provide an urban water shortage contingency analysis, which includes each of the following elements, which are within the authority of the urban water supplier…

10632 (c) Actions to be undertaken by the urban supplier to prepare for, and implement during, a catastrophic interruption of water supplies including, but not limited to, a regional power outage, an earthquake, or other disaster.

During declared shortages, or when a shortage declaration appears imminent, the City Administrator will activate a water shortage response team. Shortages can be caused by an earthquake or other catastrophic interruption. The team includes: public utilities, water, fire, planning, health and emergency services. Other actions and procedures to be followed during catastrophic events will be developed. [Checklist #37, §10632(c)]

8.6 Reduction Measuring Mechanism

10632. The plan shall provide an urban water shortage contingency analysis which includes each of the following elements which are within the authority of the urban water supplier:

10632. (i) A mechanism for determining actual reductions in water use pursuant to the urban water shortage contingency analysis.

The City's water system is supplied by groundwater wells. Each well includes a flow-monitoring device that records the amount of water entering the City's distribution system. The City would use these devices to monitor actual citywide reductions in water use. [Checklist #43, §10632(g)]

CHAPTER NINE

WATER RECYCLING

CHAPTER NINE – WATER RECYCLING

LAW

10633. The plan shall provide, to the extent available, information on recycled water and its potential for use as a water source in the service area of the urban water supplied. To the extent practicable, the preparation of the plan shall be coordinated with local water, wastewater, groundwater, and planning agencies and shall include all of the following:

10633 (a). A description of the wastewater collection and treatment systems in the supplier's service area, including a quantification of the amount of wastewater collected and treated and the methods of wastewater disposal.

10633 (b). A description of the recycled water currently being used in the supplier's service area, including but not limited to, the type, place and quantity of use.

10633 (c). A description and quantification of the potential uses of recycled water, including, but not limited to, agricultural irrigation, landscape irrigation, wildlife habitat enhancement, wetlands, industrial reuse determination with regard to the technical and economic feasibility of serving those uses, groundwater recharge, and other appropriate use…

10633 (d). The projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years.

10633 (e). A description of actions, including financial incentives, which may be taken to encourage the use of recycled water, and the projected results of these actions in terms of acre-feet of recycled water used per year.

10633 (f). A plan for optimizing the use of recycled water in the supplier's service area, including actions to facilitate the installation of dual distribution systems and to promote recirculating uses.

9.1 Water Recycling Programs

The City of Exeter and the businesses supplied by the City's water system employ minimal water recycling procedures. Municipal operations and local industry activities are not to the development level that would significantly impact the amount of City water supply from the groundwater basin. Although no formal water recycling plan is used, efforts are made to minimize the amount of groundwater use and maximize opportunities for groundwater recharge. This Plan section describes the existing and planned water recycling programs. [Checklist #44, §10633]

9.2 Existing City Wastewater Treatment and Recycling Facilities

The City of Exeter provides wastewater services to its residential, commercial, and industrial water users. The Waste Water Treatment Facility (WWTF) operates under Waste Discharge Requirement R5-2002-0062, issued by the RWQCB.

The WWTF directs secondary treatment effluent into effluent ponds where it is stored for ground percolation and evaporation. Groundwater recharge is the only form of water recycling used in the City. Although there are no direct economic benefits, groundwater recharge potentially reduces the depth of operation for local water wells.

The WWTF effluent ponds and the three storm water basins within the City serve as the City's primary source of groundwater recharge and reuse. The operations of the surrounding agricultural facilities serve as a secondary source of ground water recharge. Although no formal plans currently exist, efficient use of irrigation water is a necessity in running a cost effective agricultural business. Consequentially, groundwater recharge is a beneficial by-product of running effective agricultural facilities. No other water recycling operations are currently in place. [Checklist #49, §10633(e)]

9.3 Projected Recycling Usage

It is anticipated that the water recycled by local agricultural facilities with remain constant throughout the planning period. The City's recycled domestic effluent will increase proportionate to anticipated population growth.

As the State continues efforts to increase groundwater recharge and minimize water usage, the City will continue to evaluate and, as opportunities exist, implement effective practices to increase the amount of water recycling programs within the City. Currently, the majority of water used in and around the City is effectively discharged for groundwater percolation through basins or agricultural fields. There are no public or private facility operations that utilize a large enough quantity of water that would provide the opportunity to utilize a specific water recycling program. At this time, the development of any incentive program to encourage water recycling would be unproductive without the current existence of any facility to take part in such a program.

Future water recycling opportunities will be evaluated for new developments within the City. As the City grows in water usage, the City will look towards developing specific best management practices in regards to water recycling for all operations within the City's sphere of influence.

Table 9.3-1
Wastewater Collection and Treatment – AF Year[1]
[Checklist #45, §10633(a)]

Type of Wastewater	2000	2005	2010	2015	2020	2025	2030	2035	2040
Wastewater collected & treated in service area	1,039*	1,093*	1,202*	1,319	1,448	1,589	1,745	1,915	2,102
Volume that meets recycled water standard	1,039*	1,093*	1,202*	1,319	1,448	1,589	1,745	1,915	2,102

9.4 Other Water Conservation Practices

The City is aware of the importance of implementing good water conservation practices especially with the current condition of declining water resources within the State. Although not many opportunities for water recycling exist for an area with relatively low water consumption, the City of Exeter plans to responsibly manage local water resources through implementing other water conservation practices.

It is the intention of the City to follow water conservation efforts as indicated in Chapter Eight of the Water System Master Plan adopted by the City in September 2008 (Appendix M). These conservation efforts include continued use of water meters, xeriscape landscaping, and public education programs.

[1] Projected wastewater uses are based on actual treatment volumes* from Exeter's WWTP. The future volumes are projected using the anticipated growth rate of 1.88%.

APPENDICES

Appendix A

California Water Code, Sections 10610-10656; The Urban Water Management Planning Act

CALIFORNIA WATER CODE DIVISION 6
PART 2.6. URBAN WATER MANAGEMENT PLANNING

All California Codes have been updated to include the 2010 Statutes.

WATER CODE
SECTION 10610-10610.4

10610. This part shall be known and may be cited as the "Urban Water Management Planning Act."

10610.2. (a) The Legislature finds and declares all of the following:

(1) The waters of the state are a limited and renewable resource subject to ever-increasing demands.

(2) The conservation and efficient use of urban water supplies are of statewide concern; however, the planning for that use and the implementation of those plans can best be accomplished at the local level.

(3) A long-term, reliable supply of water is essential to protect the productivity of California's businesses and economic climate.

(4) As part of its long-range planning activities, every urban water supplier should make every effort to ensure the appropriate level of reliability in its water service sufficient to meet the needs of its various categories of customers during normal, dry, and multiple dry water years.

(5) Public health issues have been raised over a number of contaminants that have been identified in certain local and imported water supplies.

(6) Implementing effective water management strategies, including groundwater storage projects and recycled water projects, may require specific water quality and salinity targets for meeting groundwater basins water quality objectives and promoting beneficial use of recycled water.

(7) Water quality regulations are becoming an increasingly important factor in water agencies' selection of raw water sources, treatment alternatives, and modifications to existing treatment facilities.

(8) Changes in drinking water quality standards may also impact the usefulness of water supplies and may ultimately impact supply reliability.

(9) The quality of source supplies can have a significant impact

on water management strategies and supply reliability.
(b) This part is intended to provide assistance to water agencies in carrying out their long-term resource planning responsibilities to ensure adequate water supplies to meet existing and future demands for water.

10610.4. The Legislature finds and declares that it is the policy of the state as follows:
(a) The management of urban water demands and efficient use of water shall be actively pursued to protect both the people of the state and their water resources.
(b) The management of urban water demands and efficient use of urban water supplies shall be a guiding criterion in public decisions.
(c) Urban water suppliers shall be required to develop water management plans to actively pursue the efficient use of available supplies.

WATER CODE
SECTION 10611-10617

10611. Unless the context otherwise requires, the definitions of this chapter govern the construction of this part.

10611.5. "Demand management" means those water conservation measures, programs, and incentives that prevent the waste of water and promote the reasonable and efficient use and reuse of available supplies.

10612. "Customer" means a purchaser of water from a water supplier who uses the water for municipal purposes, including residential, commercial, governmental, and industrial uses.

10613. "Efficient use" means those management measures that result in the most effective use of water so as to prevent its waste or unreasonable use or unreasonable method of use.

10614. "Person" means any individual, firm, association, organization, partnership, business, trust, corporation, company, public agency, or any agency of such an entity.

10615. "Plan" means an urban water management plan prepared pursuant to this part. A plan shall describe and evaluate sources of supply, reasonable and practical efficient uses, reclamation and demand management activities. The components of the plan may vary according to an individual community or area's characteristics and its capabilities to efficiently use and conserve water. The plan shall address measures for residential, commercial, governmental, and industrial water demand management as set forth in Article 2 (commencing with Section 10630) of Chapter 3. In addition, a strategy and time schedule for implementation shall be included in the plan.

10616. "Public agency" means any board, commission, county, city

and county, city, regional agency, district, or other public entity.

10616.5. "Recycled water" means the reclamation and reuse of wastewater for beneficial use.

10617. "Urban water supplier" means a supplier, either publicly or privately owned, providing water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually. An urban water supplier includes a supplier or contractor for water, regardless of the basis of right, which distributes or sells for ultimate resale to customers. This part applies only to water supplied from public water systems subject to Chapter 4 (commencing with Section 116275) of Part 12 of Division 104 of the Health and Safety Code.

WATER CODE
SECTION 10620-10621

10620. (a) Every urban water supplier shall prepare and adopt an urban water management plan in the manner set forth in Article 3 (commencing with Section 10640).

(b) Every person that becomes an urban water supplier shall adopt an urban water management plan within one year after it has become an urban water supplier.

(c) An urban water supplier indirectly providing water shall not include planning elements in its water management plan as provided in Article 2 (commencing with Section 10630) that would be applicable to urban water suppliers or public agencies directly providing water, or to their customers, without the consent of those suppliers or public agencies.

(d) (1) An urban water supplier may satisfy the requirements of this part by participation in areawide, regional, watershed, or basinwide urban water management planning where those plans will reduce preparation costs and contribute to the achievement of conservation and efficient water use.

(2) Each urban water supplier shall coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.

(e) The urban water supplier may prepare the plan with its own staff, by contract, or in cooperation with other governmental agencies.

(f) An urban water supplier shall describe in the plan water management tools and options used by that entity that will maximize resources and minimize the need to import water from other regions.

10621. (a) Each urban water supplier shall update its plan at least once every five years on or before December 31, in years ending in five and zero.

(b) Every urban water supplier required to prepare a plan pursuant to this part shall, at least 60 days prior to the public hearing on the plan required by Section 10642, notify any city or county within which the supplier provides water supplies that the urban water

supplier will be reviewing the plan and considering amendments or changes to the plan. The urban water supplier may consult with, and obtain comments from, any city or county that receives notice pursuant to this subdivision.

(c) The amendments to, or changes in, the plan shall be adopted and filed in the manner set forth in Article 3 (commencing with Section 10640).

WATER CODE
SECTION 10630-10634

10630. It is the intention of the Legislature, in enacting this part, to permit levels of water management planning commensurate with the numbers of customers served and the volume of water supplied.

10631. A plan shall be adopted in accordance with this chapter that shall do all of the following:

(a) Describe the service area of the supplier, including current and projected population, climate, and other demographic factors affecting the supplier's water management planning. The projected population estimates shall be based upon data from the state, regional, or local service agency population projections within the service area of the urban water supplier and shall be in five-year increments to 20 years or as far as data is available.

(b) Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments described in subdivision (a). If groundwater is identified as an existing or planned source of water available to the supplier, all of the following information shall be included in the plan:

(1) A copy of any groundwater management plan adopted by the urban water supplier, including plans adopted pursuant to Part 2.75 (commencing with Section 10750), or any other specific authorization for groundwater management.

(2) A description of any groundwater basin or basins from which the urban water supplier pumps groundwater. For those basins for which a court or the board has adjudicated the rights to pump groundwater, a copy of the order or decree adopted by the court or the board and a description of the amount of groundwater the urban water supplier has the legal right to pump under the order or decree. For basins that have not been adjudicated, information as to whether the department has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most current official departmental bulletin that characterizes the condition of the groundwater basin, and a detailed description of the efforts being undertaken by the urban water supplier to eliminate the long-term overdraft condition.

(3) A detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

(4) A detailed description and analysis of the amount and location of groundwater that is projected to be pumped by the urban water supplier. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

(c) (1) Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage, to the extent practicable, and provide data for each of the following:

(A) An average water year.

(B) A single dry water year.

(C) Multiple dry water years.

(2) For any water source that may not be available at a consistent level of use, given specific legal, environmental, water quality, or climatic factors, describe plans to supplement or replace that source with alternative sources or water demand management measures, to the extent practicable.

(d) Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.

(e) (1) Quantify, to the extent records are available, past and current water use, over the same five-year increments described in subdivision (a), and projected water use, identifying the uses among water use sectors, including, but not necessarily limited to, all of the following uses:

(A) Single-family residential.

(B) Multifamily.

(C) Commercial.

(D) Industrial.

(E) Institutional and governmental.

(F) Landscape.

(G) Sales to other agencies.

(H) Saline water intrusion barriers, groundwater recharge, or conjunctive use, or any combination thereof.

(I) Agricultural.

(2) The water use projections shall be in the same five-year increments described in subdivision (a).

(f) Provide a description of the supplier's water demand management measures. This description shall include all of the following:

(1) A description of each water demand management measure that is currently being implemented, or scheduled for implementation, including the steps necessary to implement any proposed measures, including, but not limited to, all of the following:

(A) Water survey programs for single-family residential and multifamily residential customers.

(B) Residential plumbing retrofit.

(C) System water audits, leak detection, and repair.

(D) Metering with commodity rates for all new connections and retrofit of existing connections.

(E) Large landscape conservation programs and incentives.

(F) High-efficiency washing machine rebate programs.

(G) Public information programs.

(H) School education programs.

(I) Conservation programs for commercial, industrial, and institutional accounts.

(J) Wholesale agency programs.
(K) Conservation pricing.
(L) Water conservation coordinator.
(M) Water waste prohibition.
(N) Residential ultra-low-flush toilet replacement programs.
(2) A schedule of implementation for all water demand management measures proposed or described in the plan.
(3) A description of the methods, if any, that the supplier will use to evaluate the effectiveness of water demand management measures implemented or described under the plan.
(4) An estimate, if available, of existing conservation savings on water use within the supplier's service area, and the effect of the savings on the supplier's ability to further reduce demand.
(g) An evaluation of each water demand management measure listed in paragraph (1) of subdivision (f) that is not currently being implemented or scheduled for implementation. In the course of the evaluation, first consideration shall be given to water demand management measures, or combination of measures, that offer lower incremental costs than expanded or additional water supplies. This evaluation shall do all of the following:
(1) Take into account economic and noneconomic factors, including environmental, social, health, customer impact, and technological factors.
(2) Include a cost-benefit analysis, identifying total benefits and total costs.
(3) Include a description of funding available to implement any planned water supply project that would provide water at a higher unit cost.
(4) Include a description of the water supplier's legal authority to implement the measure and efforts to work with other relevant agencies to ensure the implementation of the measure and to share the cost of implementation.
(h) Include a description of all water supply projects and water supply programs that may be undertaken by the urban water supplier to meet the total projected water use as established pursuant to subdivision (a) of Section 10635. The urban water supplier shall include a detailed description of expected future projects and programs, other than the demand management programs identified pursuant to paragraph (1) of subdivision (f), that the urban water supplier may implement to increase the amount of the water supply available to the urban water supplier in average, single-dry, and multiple-dry water years. The description shall identify specific projects and include a description of the increase in water supply that is expected to be available from each project. The description shall include an estimate with regard to the implementation timeline for each project or program.
(i) Describe the opportunities for development of desalinated water, including, but not limited to, ocean water, brackish water, and groundwater, as a long-term supply.
(j) For purposes of this part, urban water suppliers that are members of the California Urban Water Conservation Council shall be deemed in compliance with the requirements of subdivisions (f) and (g) by complying with all the provisions of the "Memorandum of Understanding Regarding Urban Water Conservation in California,"

dated December 10, 2008, as it may be amended, and by submitting the annual reports required by Section 6.2 of that memorandum.

(k) Urban water suppliers that rely upon a wholesale agency for a source of water shall provide the wholesale agency with water use projections from that agency for that source of water in five-year increments to 20 years or as far as data is available. The wholesale agency shall provide information to the urban water supplier for inclusion in the urban water supplier's plan that identifies and quantifies, to the extent practicable, the existing and planned sources of water as required by subdivision (b), available from the wholesale agency to the urban water supplier over the same five-year increments, and during various water-year types in accordance with subdivision (c). An urban water supplier may rely upon water supply information provided by the wholesale agency in fulfilling the plan informational requirements of subdivisions (b) and (c).

10631.1. (a) The water use projections required by Section 10631 shall include projected water use for single-family and multifamily residential housing needed for lower income households, as defined in Section 50079.5 of the Health and Safety Code, as identified in the housing element of any city, county, or city and county in the service area of the supplier.

(b) It is the intent of the Legislature that the identification of projected water use for single-family and multifamily residential housing for lower income households will assist a supplier in complying with the requirement under Section 65589.7 of the Government Code to grant a priority for the provision of service to housing units affordable to lower income households.

10631.5. (a) (1) Beginning January 1, 2009, the terms of, and eligibility for, a water management grant or loan made to an urban water supplier and awarded or administered by the department, state board, or California Bay-Delta Authority or its successor agency shall be conditioned on the implementation of the water demand management measures described in Section 10631, as determined by the department pursuant to subdivision (b).

(2) For the purposes of this section, water management grants and loans include funding for programs and projects for surface water or groundwater storage, recycling, desalination, water conservation, water supply reliability, and water supply augmentation. This section does not apply to water management projects funded by the federal American Recovery and Reinvestment Act of 2009 (Public Law 111-5).

(3) Notwithstanding paragraph (1), the department shall determine that an urban water supplier is eligible for a water management grant or loan even though the supplier is not implementing all of the water demand management measures described in Section 10631, if the urban water supplier has submitted to the department for approval a schedule, financing plan, and budget, to be included in the grant or loan agreement, for implementation of the water demand management measures. The supplier may request grant or loan funds to implement the water demand management measures to the extent the request is consistent with the eligibility requirements applicable to the water management funds.

(4) (A) Notwithstanding paragraph (1), the department shall

determine that an urban water supplier is eligible for a water management grant or loan even though the supplier is not implementing all of the water demand management measures described in Section 10631, if an urban water supplier submits to the department for approval documentation demonstrating that a water demand management measure is not locally cost effective. If the department determines that the documentation submitted by the urban water supplier fails to demonstrate that a water demand management measure is not locally cost effective, the department shall notify the urban water supplier and the agency administering the grant or loan program within 120 days that the documentation does not satisfy the requirements for an exemption, and include in that notification a detailed statement to support the determination.

(B) For purposes of this paragraph, "not locally cost effective" means that the present value of the local benefits of implementing a water demand management measure is less than the present value of the local costs of implementing that measure.

(b) (1) The department, in consultation with the state board and the California Bay-Delta Authority or its successor agency, and after soliciting public comment regarding eligibility requirements, shall develop eligibility requirements to implement the requirement of paragraph (1) of subdivision (a). In establishing these eligibility requirements, the department shall do both of the following:

(A) Consider the conservation measures described in the Memorandum of Understanding Regarding Urban Water Conservation in California, and alternative conservation approaches that provide equal or greater water savings.

(B) Recognize the different legal, technical, fiscal, and practical roles and responsibilities of wholesale water suppliers and retail water suppliers.

(2) (A) For the purposes of this section, the department shall determine whether an urban water supplier is implementing all of the water demand management measures described in Section 10631 based on either, or a combination, of the following:

(i) Compliance on an individual basis.

(ii) Compliance on a regional basis. Regional compliance shall require participation in a regional conservation program consisting of two or more urban water suppliers that achieves the level of conservation or water efficiency savings equivalent to the amount of conservation or savings achieved if each of the participating urban water suppliers implemented the water demand management measures. The urban water supplier administering the regional program shall provide participating urban water suppliers and the department with data to demonstrate that the regional program is consistent with this clause. The department shall review the data to determine whether the urban water suppliers in the regional program are meeting the eligibility requirements.

(B) The department may require additional information for any determination pursuant to this section.

(3) The department shall not deny eligibility to an urban water supplier in compliance with the requirements of this section that is participating in a multiagency water project, or an integrated regional water management plan, developed pursuant to Section 75026 of the Public Resources Code, solely on the basis that one or more of

the agencies participating in the project or plan is not implementing all of the water demand management measures described in Section 10631.

(c) In establishing guidelines pursuant to the specific funding authorization for any water management grant or loan program subject to this section, the agency administering the grant or loan program shall include in the guidelines the eligibility requirements developed by the department pursuant to subdivision (b).

(d) Upon receipt of a water management grant or loan application by an agency administering a grant and loan program subject to this section, the agency shall request an eligibility determination from the department with respect to the requirements of this section. The department shall respond to the request within 60 days of the request.

(e) The urban water supplier may submit to the department copies of its annual reports and other relevant documents to assist the department in determining whether the urban water supplier is implementing or scheduling the implementation of water demand management activities. In addition, for urban water suppliers that are signatories to the Memorandum of Understanding Regarding Urban Water Conservation in California and submit biennial reports to the California Urban Water Conservation Council in accordance with the memorandum, the department may use these reports to assist in tracking the implementation of water demand management measures.

(f) This section shall remain in effect only until July 1, 2016, and as of that date is repealed, unless a later enacted statute, that is enacted before July 1, 2016, deletes or extends that date.

10631.7. The department, in consultation with the California Urban Water Conservation Council, shall convene an independent technical panel to provide information and recommendations to the department and the Legislature on new demand management measures, technologies, and approaches. The panel shall consist of no more than seven members, who shall be selected by the department to reflect a balanced representation of experts. The panel shall have at least one, but no more than two, representatives from each of the following: retail water suppliers, environmental organizations, the business community, wholesale water suppliers, and academia. The panel shall be convened by January 1, 2009, and shall report to the Legislature no later than January 1, 2010, and every five years thereafter. The department shall review the panel report and include in the final report to the Legislature the department's recommendations and comments regarding the panel process and the panel's recommendations.

10632. (a) The plan shall provide an urban water shortage contingency analysis that includes each of the following elements that are within the authority of the urban water supplier:

(1) Stages of action to be undertaken by the urban water supplier in response to water supply shortages, including up to a 50 percent reduction in water supply, and an outline of specific water supply conditions that are applicable to each stage.

(2) An estimate of the minimum water supply available during each of the next three water years based on the driest three-year historic

sequence for the agency's water supply.

(3) Actions to be undertaken by the urban water supplier to prepare for, and implement during, a catastrophic interruption of water supplies including, but not limited to, a regional power outage, an earthquake, or other disaster.

(4) Additional, mandatory prohibitions against specific water use practices during water shortages, including, but not limited to, prohibiting the use of potable water for street cleaning.

(5) Consumption reduction methods in the most restrictive stages. Each urban water supplier may use any type of consumption reduction methods in its water shortage contingency analysis that would reduce water use, are appropriate for its area, and have the ability to achieve a water use reduction consistent with up to a 50 percent reduction in water supply.

(6) Penalties or charges for excessive use, where applicable.

(7) An analysis of the impacts of each of the actions and conditions described in paragraphs (1) to (6), inclusive, on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts, such as the development of reserves and rate adjustments.

(8) A draft water shortage contingency resolution or ordinance.

(9) A mechanism for determining actual reductions in water use pursuant to the urban water shortage contingency analysis.

(b) Commencing with the urban water management plan update due December 31, 2015, for purposes of developing the water shortage contingency analysis pursuant to subdivision (a), the urban water supplier shall analyze and define water features that are artificially supplied with water, including ponds, lakes, waterfalls, and fountains, separately from swimming pools and spas, as defined in subdivision (a) of Section 115921 of the Health and Safety Code.

10633. The plan shall provide, to the extent available, information on recycled water and its potential for use as a water source in the service area of the urban water supplier. The preparation of the plan shall be coordinated with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area, and shall include all of the following:

(a) A description of the wastewater collection and treatment systems in the supplier's service area, including a quantification of the amount of wastewater collected and treated and the methods of wastewater disposal.

(b) A description of the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.

(c) A description of the recycled water currently being used in the supplier's service area, including, but not limited to, the type, place, and quantity of use.

(d) A description and quantification of the potential uses of recycled water, including, but not limited to, agricultural irrigation, landscape irrigation, wildlife habitat enhancement, wetlands, industrial reuse, groundwater recharge, indirect potable reuse, and other appropriate uses, and a determination with regard to the technical and economic feasibility of serving those uses.

(e) The projected use of recycled water within the supplier's

service area at the end of 5, 10, 15, and 20 years, and a description of the actual use of recycled water in comparison to uses previously projected pursuant to this subdivision.

(f) A description of actions, including financial incentives, which may be taken to encourage the use of recycled water, and the projected results of these actions in terms of acre-feet of recycled water used per year.

(g) A plan for optimizing the use of recycled water in the supplier's service area, including actions to facilitate the installation of dual distribution systems, to promote recirculating uses, to facilitate the increased use of treated wastewater that meets recycled water standards, and to overcome any obstacles to achieving that increased use.

10634. The plan shall include information, to the extent practicable, relating to the quality of existing sources of water available to the supplier over the same five-year increments as described in subdivision (a) of Section 10631, and the manner in which water quality affects water management strategies and supply reliability.

WATER CODE SECTION 10635

10635. (a) Every urban water supplier shall include, as part of its urban water management plan, an assessment of the reliability of its water service to its customers during normal, dry, and multiple dry water years. This water supply and demand assessment shall compare the total water supply sources available to the water supplier with the total projected water use over the next 20 years, in five-year increments, for a normal water year, a single dry water year, and multiple dry water years. The water service reliability assessment shall be based upon the information compiled pursuant to Section 10631, including available data from state, regional, or local agency population projections within the service area of the urban water supplier.

(b) The urban water supplier shall provide that portion of its urban water management plan prepared pursuant to this article to any city or county within which it provides water supplies no later than 60 days after the submission of its urban water management plan.

(c) Nothing in this article is intended to create a right or entitlement to water service or any specific level of water service.

(d) Nothing in this article is intended to change existing law concerning an urban water supplier's obligation to provide water service to its existing customers or to any potential future customers.

WATER CODE
SECTION 10640-10645

10640. Every urban water supplier required to prepare a plan pursuant to this part shall prepare its plan pursuant to Article 2 (commencing with Section 10630).

The supplier shall likewise periodically review the plan as required by Section 10621, and any amendments or changes required as a result of that review shall be adopted pursuant to this article.

10641. An urban water supplier required to prepare a plan may consult with, and obtain comments from, any public agency or state agency or any person who has special expertise with respect to water demand management methods and techniques.

10642. Each urban water supplier shall encourage the active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan. Prior to adopting a plan, the urban water supplier shall make the plan available for public inspection and shall hold a public hearing thereon. Prior to the hearing, notice of the time and place of hearing shall be published within the jurisdiction of the publicly owned water supplier pursuant to Section 6066 of the Government Code. The urban water supplier shall provide notice of the time and place of hearing to any city or county within which the supplier provides water supplies. A privately owned water supplier shall provide an equivalent notice within its service area. After the hearing, the plan shall be adopted as prepared or as modified after the hearing.

10643. An urban water supplier shall implement its plan adopted pursuant to this chapter in accordance with the schedule set forth in its plan.

10644. (a) An urban water supplier shall submit to the department, the California State Library, and any city or county within which the supplier provides water supplies a copy of its plan no later than 30 days after adoption. Copies of amendments or changes to the plans shall be submitted to the department, the California State Library, and any city or county within which the supplier provides water supplies within 30 days after adoption.

(b) The department shall prepare and submit to the Legislature, on or before December 31, in the years ending in six and one, a report summarizing the status of the plans adopted pursuant to this part. The report prepared by the department shall identify the exemplary elements of the individual plans. The department shall provide a copy of the report to each urban water supplier that has submitted its plan to the department. The department shall also prepare reports and provide data for any legislative hearings designed to consider the effectiveness of plans submitted pursuant to this part.

(c) (1) For the purpose of identifying the exemplary elements of the individual plans, the department shall identify in the report those water demand management measures adopted and implemented by specific urban water suppliers, and identified pursuant to Section

10631, that achieve water savings significantly above the levels established by the department to meet the requirements of Section 10631.5.

(2) The department shall distribute to the panel convened pursuant to Section 10631.7 the results achieved by the implementation of those water demand management measures described in paragraph (1).

(3) The department shall make available to the public the standard the department will use to identify exemplary water demand management measures.

10645. Not later than 30 days after filing a copy of its plan with the department, the urban water supplier and the department shall make the plan available for public review during normal business hours.

WATER CODE
SECTION 10650-10656

10650. Any actions or proceedings to attack, review, set aside, void, or annul the acts or decisions of an urban water supplier on the grounds of noncompliance with this part shall be commenced as follows:

(a) An action or proceeding alleging failure to adopt a plan shall be commenced within 18 months after that adoption is required by this part.

(b) Any action or proceeding alleging that a plan, or action taken pursuant to the plan, does not comply with this part shall be commenced within 90 days after filing of the plan or amendment thereto pursuant to Section 10644 or the taking of that action.

10651. In any action or proceeding to attack, review, set aside, void, or annul a plan, or an action taken pursuant to the plan by an urban water supplier on the grounds of noncompliance with this part, the inquiry shall extend only to whether there was a prejudicial abuse of discretion. Abuse of discretion is established if the supplier has not proceeded in a manner required by law or if the action by the water supplier is not supported by substantial evidence.

10652. The California Environmental Quality Act (Division 13 (commencing with Section 21000) of the Public Resources Code) does not apply to the preparation and adoption of plans pursuant to this part or to the implementation of actions taken pursuant to Section 10632. Nothing in this part shall be interpreted as exempting from the California Environmental Quality Act any project that would significantly affect water supplies for fish and wildlife, or any project for implementation of the plan, other than projects implementing Section 10632, or any project for expanded or additional water supplies.

10653. The adoption of a plan shall satisfy any requirements of state law, regulation, or order, including those of the State Water Resources Control Board and the Public Utilities Commission, for the preparation of water management plans or conservation plans; provided, that if the State Water Resources Control Board or the Public Utilities Commission requires additional information concerning water conservation to implement its existing authority, nothing in this part shall be deemed to limit the board or the commission in obtaining that information. The requirements of this part shall be satisfied by any urban water demand management plan prepared to meet federal laws or regulations after the effective date of this part, and which substantially meets the requirements of this part, or by any existing urban water management plan which includes the contents of a plan required under this part.

10654. An urban water supplier may recover in its rates the costs incurred in preparing its plan and implementing the reasonable water conservation measures included in the plan. Any best water management practice that is included in the plan that is identified in the

"Memorandum of Understanding Regarding Urban Water Conservation in California" is deemed to be reasonable for the purposes of this section.

10655. If any provision of this part or the application thereof to any person or circumstances is held invalid, that invalidity shall not affect other provisions or applications of this part which can be given effect without the invalid provision or application thereof, and to this end the provisions of this part are severable.

10656. An urban water supplier that does not prepare, adopt, and submit its urban water management plan to the department in accordance with this part, is ineligible to receive funding pursuant to Division 24 (commencing with Section 78500) or Division 26 (commencing with Section 79000), or receive drought assistance from the state until the urban water management plan is submitted pursuant to this article.

Appendix B

Area & Urban Development Map

Planning Boundaries

Legend

- City Limits
- 10-Year Annexation Boundary
- Urban Development Boundary
- Palm Dr. Roads
- Railroads
- Friant-Kern Canal
- Parcels

Visalia Rd.

Palm Dr.

Rocky Hill Dr.

Firebaugh Ave.

List Ave.

Belmont St.

Filbert St.

Kaweah St.

Exeter General Plan

Collins & Schoettler
PLANNING CONSULTANTS
1000 West Main Street • Visalia, CA • 93291

N
W E
S

Base data provided by Tulare County
Created on September 1, 2001
by Benjamin A. Kimball
For reference only
Not drawn to engineering standards

500 0 500 1000 1500 Feet

Appendix C

Growth Constraints Map

PLOT DATE: Jun-16-2009 10:02AM
JOB NO.: 070401
FILE NAME: Growth Constraints Map.dwg
SCALE: 1"=400'
SHEET NO.: 1 OF 1

IMPROVEMENT PLAN FOR:

CITY OF EXETER

P O BOX 234
EXETER CA, 93221
(559) 592-3710

URBAN WATER MANAGEMENT PLAN
GROWTH CONSTRAINTS MAP

PREPARED BY:

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DRAWN BY: KR | CHECKED BY: RAM

REVISIONS		
DATE	BY	DESCRIPTION

Appendix D

California Ground Water Bulletin 118

San Joaquin Valley Groundwater Basin
Kaweah Subbasin

- Groundwater Subbasin Number: 5-22.11
- County: Tulare, Kings
- Surface Area: 446,000 acres (696 square miles)

Basin Boundaries and Hydrology

The San Joaquin Valley is surrounded on the west by the Coast Ranges, on the south by the San Emigdio and Tehachapi Mountains, on the east by the Sierra Nevada and on the north by the Sacramento-San Joaquin Delta and Sacramento Valley. The northern portion of the San Joaquin Valley drains toward the Delta by the San Joaquin River and its tributaries, the Fresno, Merced, Tuolumne, and Stanislaus Rivers. The southern portion of the valley is internally drained by the Kings, Kaweah, Tule, and Kern Rivers that flow into the Tulare drainage basin including the beds of the former Tulare, Buena Vista, and Kern Lakes.

The Kaweah subbasin lies between the Kings Groundwater Subbasin on the north, the Tule Groundwater Subbasin on the south, crystalline bedrock of the Sierra Nevada foothills on the east, and the Kings River Conservation District on the west. The subbasin generally comprises lands in the Kaweah Delta Water Conservation District. Major rivers and streams in the subbasin include the Kaweah and St. Johns Rivers. The Kaweah River is the primary source of recharge to the area. Average annual precipitation is seven to 13 inches, increasing eastward.

Hydrogeologic Information

The San Joaquin Valley represents the southern portion of the Great Central Valley of California. The San Joaquin Valley is a structural trough up to 200 miles long and 70 miles wide. It is filled with up to 32,000 feet of marine and continental sediments deposited during periodic inundation by the Pacific Ocean and by erosion of the surrounding mountains, respectively. Continental deposits shed from the surrounding mountains form an alluvial wedge that thickens from the valley margins toward the axis of the structural trough. This depositional axis is below to slightly west of the series of rivers, lakes, sloughs, and marshes, which mark the current and historic axis of surface drainage in the San Joaquin Valley.

Water Bearing Formations

The sediments that comprise the Kaweah Subbasin aquifers are unconsolidated deposits of Pliocene, Pleistocene, and Holocene age. On the east side of the subbasin, these deposits consist of arkosic material derived from the Sierra Nevada and are divided into three stratigraphic units: continental deposits, older alluvium and younger alluvium. In the western portion of the subbasin, near Tulare Lake bed, unconsolidated deposits consisting of flood-subbasin and lacustrine and marsh deposits interfinger with east side deposits.

The continental deposits of Pliocene and Pleistocene age are divided into oxidized and reduced deposits based on depositional environment. The

oxidized deposits, which crop out along the eastern margin of the valley, consist of deeply weathered, poorly permeable, reddish-brown sandy silt and clay with well-developed soil profiles. The reduced deposits are moderately permeable and consist of micaceous sand, silt, and clay that extend across the trough in the subsurface to the west side of the valley.

Older alluvium, which overlies the continental deposits, is moderately to highly permeable and is the major aquifer in the subbasin. Younger alluvium consists of arkosic beds, moderately to highly permeable consisting of sand and silty sand. Flood-basin deposits consist of poorly permeable silt, clay, and fine sand. Ground water in the flood-basin deposits is often of poor quality. Lacustrine and marsh deposits consist of blue, green, or gray silty clay and fine sand and underlie the flood-subbasin deposits. Clay beds of the lacustrine and marsh deposits form aquitards that control the vertical and lateral movement of ground water. The most prominent clay bed is the Corcoran clay which underlies the western half of the Kaweah Subbasin at depths ranging from about 200 to 500 feet (DWR 1981). In the eastern portion of the subbasin, ground water occurs under unconfined and semi-confined conditions. In the western half of the subbasin, where the Corcoran Clay is present, ground water is confined below the clay.

Land subsidence of up to 4 feet due to deep compaction of fine-grained units has occurred in separate areas of the southern and western portion of the Subbasin (Ireland and others 1984). The estimated average specific yield for this subbasin is 10.8 percent (based on DWR internal data and Davis 1959).

Restrictive Structures

Groundwater flow is generally southwestward. Small groundwater depressions occurred to the north and south of Visalia and at the subbasin's northwest corner, and a groundwater mound was present in the central western subbasin during 1999 (DWR 2000). Based on current and historical groundwater elevation maps, horizontal groundwater barriers do not appear to exist in the Subbasin.

Groundwater Level Trends

Changes in groundwater levels are based on annual water level measurements by DWR and cooperators. Water level changes were evaluated by quarter township and computed through a custom DWR computer program using geostatistics (kriging). On average, the subbasin water level has declined about 12 feet from 1970 through 2000. The period from 1970 through 1978 showed steep declines totaling about 25 feet. The ten-year period from 1978 to 1988 saw stabilization and rebound of about 50 feet, bringing water levels above the 1970 water level by 25 feet. 1988 through 1995 again showed steep declines, bottoming out in 1995 at nearly 35 feet below the 1970 level. Water levels then rose about 22 feet from 1996 to 2000, bringing water levels to approximately 12 feet below 1970 levels.

Groundwater Storage

Estimations of the total storage capacity of the subbasin and the amount of water in storage as of 1995 were calculated using an estimated specific yield of 10.8 percent and water levels collected by DWR and cooperators.

According to these calculations, the total storage capacity of this subbasin is estimated to be 15,400,000 af to a depth of 300 feet and 107,000,000 af to the base of fresh groundwater. These same calculations give an estimate of 11,600,000 af of groundwater to a depth of 300 feet stored in this subbasin as of 1995 (DWR 1995). According to published literature, the amount of stored groundwater in this subbasin as of 1961 is 34,000,000 af to a depth of $\leq$ 1000 feet (Williamson 1989).

Groundwater Budget (Type B)

Although a detailed budget was not available for this subbasin, an estimate of groundwater demand was calculated based on the 1990 normalized year and data on land and water use. A subsequent analysis was done by a DWR water budget spreadsheet to estimate overall applied water demands, agricultural groundwater pumpage, urban pumping demand and other extraction data.

Natural recharge is estimated to be 62,400 af. Artificial recharge was not determined for all entities, but Lakeside Irrigation District has recharged about 7,000 af per year and in wet years may recharge up to 30,000 af (Cartwright 2001). There is approximately 286,000 af of applied water recharge into the subbasin. Subsurface inflow was not determined. Annual urban and agricultural extraction is estimated to be 58,800 af and 699,000 af, respectively. Other extractions and subsurface inflow were not determined.

Groundwater Quality

Characterization. The groundwater in this basin is generally of a calcium bicarbonate type, with sodium bicarbonate waters near the western margin. TDS values range from 35 to 1,000 mg/L, with a typical range of 300 to 600 mg/L. The Department of Health Services, which monitors Title 22 water quality standards, reports TDS values in 153 wells ranging from 35 to 580 mg/L, with an average value of 189 mg/L.

Impairments. There are localized areas of high nitrate pollution on the eastern side of the basin. There is also high salinity water between Lindsay and Exeter (Edwards 2001).

Water Quality in Public Supply Wells

Constituent Group[1]	Number of wells sampled[2]	Number of wells with a concentration above an MCL[3]
Inorganics – Primary	157	1
Radiological	158	8
Nitrates	165	13
Pesticides	167	16
VOCs and SVOCs	165	5
Inorganics – Secondary	157	25

[1] A description of each member in the constituent groups and a generalized discussion of the relevance of these groups are included in *California's Groundwater – Bulletin 118* by DWR (2003).
[2] Represents distinct number of wells sampled as required under DHS Title 22 program from 1994 through 2000.

[3] Each well reported with a concentration above an MCL was confirmed with a second detection above an MCL. This information is intended as an indicator of the types of activities that cause contamination in a given basin. It represents the water quality at the sample location. It does not indicate the water quality delivered to the consumer. More detailed drinking water quality information can be obtained from the local water purveyor and its annual Consumer Confidence Report.

Well Characteristics

	Well yields (gal/min)	
Municipal/Irrigation	Range: 100 – 2,500	Average: 1,000 – 2,000
	Total depths (ft)	
Domestic		
Municipal/Irrigation	Range: 100 - 500	

Active Monitoring Data

Agency	Parameter	Number of wells /measurement frequency
DWR (incl. Cooperators)	Groundwater levels	568 Semi-annually
Department of Health Services (inc. cooperators)	Title 22 water quality	270 Varies

Basin Management

Groundwater management:	Kings County Water District promulgated a Ground Water Management Plan under AB 255 during 1992, and the Kaweah Delta Water Conservation District passed a Ground Water Management Plan under AB 3030 in 1995.
Water agencies	
Public	Exeter I.D., Ivanhoe I.D., Kaweah-Delta Water Conservation District, Kings River Conservation District, Lakeside Irrigation Water District, Lindmore I.D., Lindsay-Strathmore I.D., St. Johns W.D., Tulare I.D., and Stone Corral W.D.
Private	California Water Service – Visalia; Melga Canal Company; Settlers Ditch Company; Corcoran Irrigation Company.

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Errata

Changes made to the basin description will be noted here.

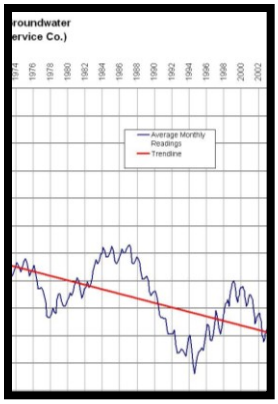
Appendix E

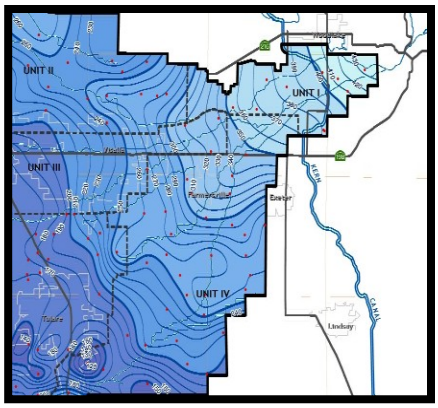
2008 Annual KDWCD Groundwater Report

KAWEAH DELTA
Water Conservation
DISTRICT

GROUNDWATER MANAGEMENT PLAN

2008 ANNUAL REPORT





GROUNDWATER MANAGEMENT PLAN

2008 Annual Report

July 1, 2009

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KAWEAH DELTA Water Conservation DISTRICT
2975 North Farmersville Boulevard
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KAWEAH DELTA Water Conservation DISTRICT

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Plate 2: - Available Recharge Basin Inventory
Plate 3: - Groundwater Recharge Facilities
Plate 4: - Groundwater Management Plan Area

APPENDICES

Appendix A: - 2008 Annual Groundwater Report
Appendix B: - 2008 Annual Groundwater Management Plan Meeting Minutes

1.0 EXECUTIVE SUMMARY

The Kaweah Delta Water Conservation District (Water Conservation District) is pleased to present this comprehensive annual progress report on the *Groundwater Management Plan* (Plan). The Plan was first adopted in 1995. The following section summarizes the goal of the Plan, the status of each of the elements of the Plan and the activities accomplished in 2008.

1.1 Plan Goal

As stated in the Plan, "The goal of the Plan is to offer efficient and effective groundwater management in an effort to provide a sustainable, high quality supply of groundwater for agricultural, environmental, and urban use for the future." The following five elements and their corresponding activities shape the Plan:

1) Monitoring Program;
2) Resource Protection;
3) Sustainability;
4) Stakeholder Involvement; and
5) Planning and Management.

Below is a summary of the Plan elements and the activities of significance that occurred in 2008. Additionally, Figure 1 lists all the Plan activities and notes the progress of each.

1.1.1 Monitoring Program

The Water Conservation District performed its spring and fall groundwater level monitoring and added that data to the historical information that has been maintained for over 50 years. In the Fall of 2008, the average depth to groundwater dropped by 11.3 feet due, in part, to a below average year in which runoff into Lake Kaweah was only 78% of average. Transfers among water users in the Plan area were an effective management tool to best utilize the reduced amount of available surface water. Annual and historical data shows that the Plan area continues to be in a state of overdraft. Subsidence monitoring, and water quality monitoring for both surface and groundwater, are newly defined activities in the Plan of which the Water Conservation District is evaluating data sources and defining an appropriate monitoring program to incorporate these activities.

1.1.2 Resource Protection

The Water Conservation District coordinated with county and city agencies in the Plan area in the development of well ordinances to help protect groundwater quality. Tulare County initiated plans to develop a well education program to encourage proper well construction, maintenance, and destruction.

Figure 1

Activities Checklist - 2008

	Action	Development	Inactive	Modified
Monitoring Program				
Groundwater Levels	■			
Groundwater Quality		■		
Surface Water Flows	■			
Surface Water Quality		■		
Intra-District Transfers	■			
Inter-District Transfers			■	
Inelastic Land Surface Subsidence		■		
Monitoring Protocols		■		
Resource Protection				
Well Abandonment		■		
Wellhead Protection		■		
Saline Water Intrusion			■	
Migration of Contaminated Groundwater			■	
Well Construction Policies		■		
Sustainability				
Distribution of District Owned Water	■			
Channel Recharge	■			
Basin Recharge	■			
In-Lieu Recharge	■			
Construction and Operation of Facilities	■			
Water Conservation	■			
No Exportation of Groundwater	■			
Reduction in Groundwater Outflow			■	
Additional Water Supply and Storage	■			
Pumping Restrictions			■	
Conjunctive Use	■			
Stakeholder Involvement				
Memorandum of Understanding		■		
Advisory Committee		■		
Relationships with Other Agencies	■			
Planning and Management				
Land Use Planning	■			
Groundwater Model	■			
Groundwater Reports	■			
Plan Re-evaluation			■	
Dispute Resolution			■	
Program Funding and Fees	■			

1.1.3 Sustainability

Due to the dry water year, there was little opportunity to enhance the groundwater table through recharge efforts. Conversely, the Water Conservation District was able to accomplish a great deal of progress in improvement to facilities, structures and the development of water management agreements with coordinating entities. These efforts should, in turn, increase the capability to manage and recharge water in years with a greater amount of surface water supply than 2008.

1.1.4 Stakeholder Involvement

Sixteen Plan participants now support the Plan through planning and oversight of the Plan area. Additionally, many efforts are in process with various water interest groups in the area to seek funding and/or promote projects that appeal regionally. The Water Conservation District has played an active role in local and regional efforts to form Integrated Regional Water Management Plans.

1.1.5 Planning and Management

The County of Tulare's General Plan update, the Water Conservation District and City of Visalia's groundwater modeling projects, and this Annual Report, are all activities that demonstrate coordinated planning and management of groundwater resources in the Kaweah Basin. Managing the Kaweah Basin groundwater is a challenge due to the historic overdraft conditions and success will only be possible through a detailed understanding of the conditions, accurate monitoring, preparation, and implementation of groundwater protection policies, and extensive recharge efforts. This level of management will require the continued collaboration of multiple dedicated stakeholders with sufficient time and finances to coordinate the planning and management of groundwater in the Kaweah Basin.

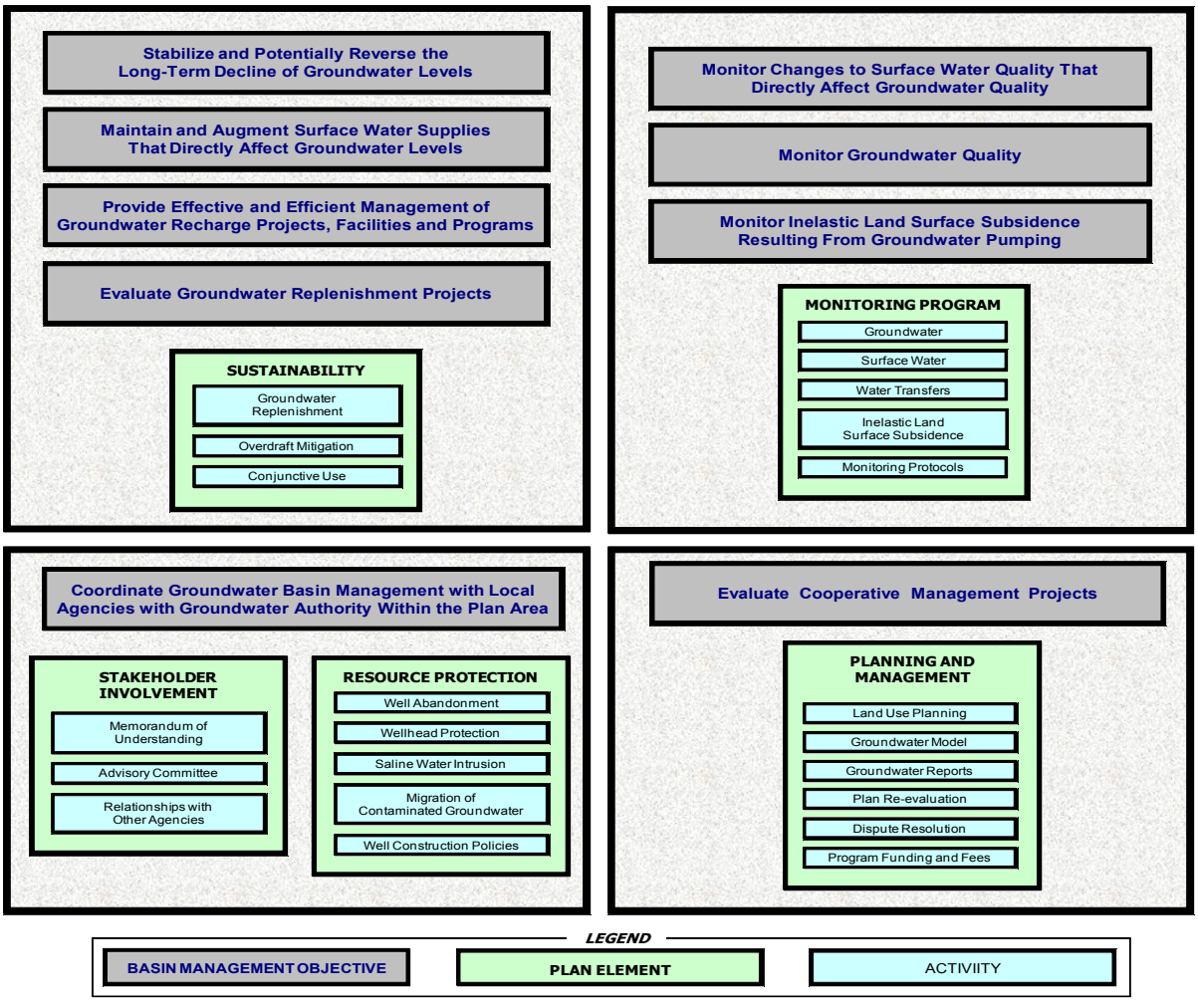
2.0 PLAN ELEMENTS

The November 7, 2006 update of Kaweah Delta Water Conservation District's (Water Conservation District) *Groundwater Management Plan* (Plan) defined five Plan elements (Elements) that establish the link between Basin Management Objectives and defined activities (Activities). These five Elements are;

1) Monitoring Program;
2) Resource Protection;
3) Sustainability;
4) Stakeholder Involvement; and
5) Planning and Management

The relationship of the Plan components can be seen on Figure 2. It is through these Elements that this Report will summarize the year's Activities, review the status of that Element, evaluate an Activities effect on the Plan's stated management objectives, and discuss any necessary changes in Plan direction. The following discussion reviews each Activity of significance undertaken in the 2008 calendar year. It is important to note that not every Activity of the Plan is discussed in this report, only those Activities in which there is reportable progress.

Figure 2: - Groundwater Management Plan Implementation Diagram



2.1 Monitoring Program

At the core of the Water Conservation District's Plan is the Monitoring Element. The collection and recording of data, both current and historical, is the means in which the Water Conservation District evaluates conditions and defines the Activities that determine the effectiveness of the Plan.

2.1.1 Groundwater

The Water Conservation District has been monitoring and recording groundwater data since 1952. Refer to Figure 3 for a graphic depiction of the historic groundwater levels recorded within the Water Conservation District. *Annual Groundwater Reports*, which detail Spring and Fall groundwater measurements, have been compiled since 1978. Additionally, California Water Service Company, the local purveyor of water for the City of Visalia, has monitored and recorded city groundwater level data since 1940. Refer to Figure 4 for a graphic depiction of the historic groundwater levels below the City of Visalia.

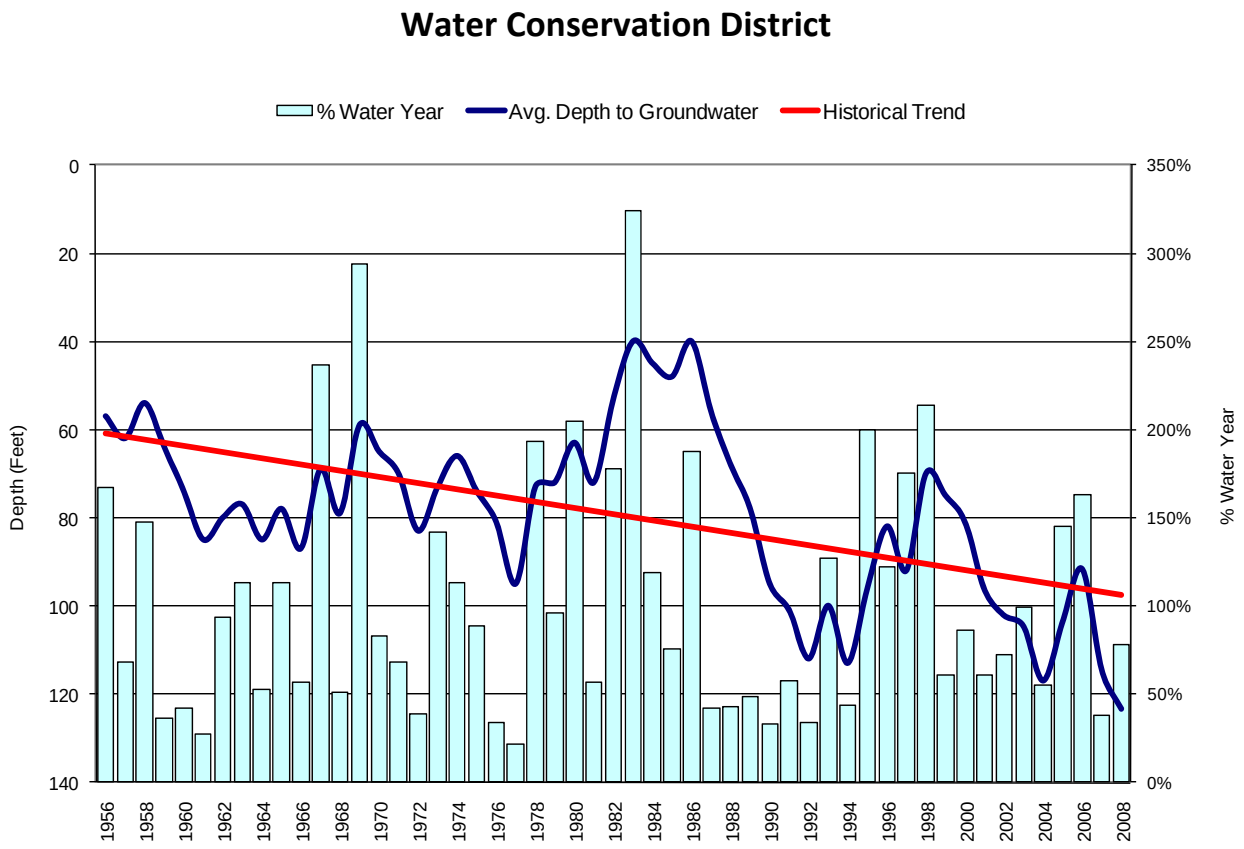
2.1.1.1 Groundwater Levels

Annual groundwater measurements were collected for the calendar year 2008 and the results have been published in the Water Conservation District's *2008 Annual Groundwater Report* included as Appendix A of this report. Compared to the previous year, the average depth to groundwater dropped 16.2 feet in the Spring of 2008 and dropped 11.3 feet in the Fall of 2008 to an average depth to groundwater of 122.8 feet. The collected data for calendar years 2007 & 2008 have been developed into contour maps for both depth to groundwater and groundwater elevation, and are included in the *2008 Annual Groundwater Report*.

Early monitoring data reflects that, historically, the average depth to standing water within the Water Conservation District has dropped. Characteristically, the depth to groundwater responds in some degree to the water year with the depth generally dropping in dryer years and rising in wetter years. These responses are generally reflective of the use of surface water versus groundwater for agricultural irrigation and the additional recharge efforts that take place in a wet year. Overall, the average depth to groundwater in the Water Conservation District is dropping based upon a trend analysis of available data since 1956. The overall result is that the Water Conservation District, as a whole, is in a long-term overdrafted condition.

Currently, the Water Conservation District measures over 150 wells semi-annually, in the Spring and Fall. The number of wells measured fluctuates annually due to the number of measurable wells being lost to urbanization. Additional measurements are supplied by Tulare Irrigation District and Kings County Water District for the same periods, bringing the total number of wells monitored within the Water Conservation District to over 300. The groundwater-monitoring program has been a primary Activity in the Water Conservation District's effort to track groundwater levels. Monitoring plays a key role in determining the effectiveness of the Water Conservation District's groundwater recharge programs, which include importation of water, development of recharge facilities, and operational agreements with various local entities to manage water and facilities.

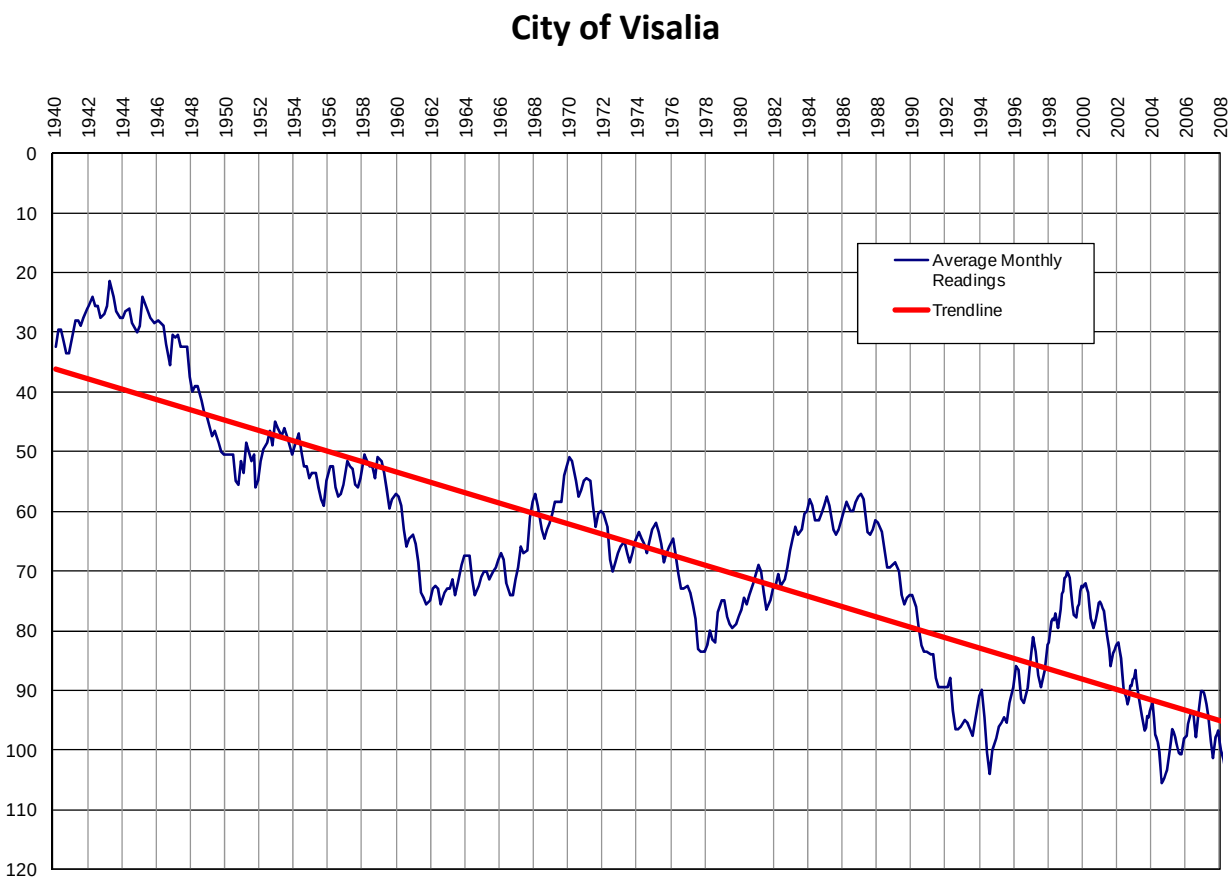
Figure 3:- Historical Average Depth to Groundwater: (Fall Measurement)



The majority of wells that the Water Conservation District measures each spring and fall for depth to groundwater are agricultural production wells. When measuring water levels, it is common to come across a running pump at a well, which prevents measurement and data collection, reducing annual comparison data.

Additionally, each year a number of wells within the network are removed, or destroyed due to improvements or development. This affects both the annual and historical well database used to evaluate groundwater conditions. The Water Conservation District continues to work toward securing wells for future monitoring by coordinating with the counties of Tulare and Kings to educate developers/landowners of their use, proper construction, operation, maintenance, and destruction.

Figure 4: - Historical Average Depth to Groundwater: Visalia (Monthly Measurement)



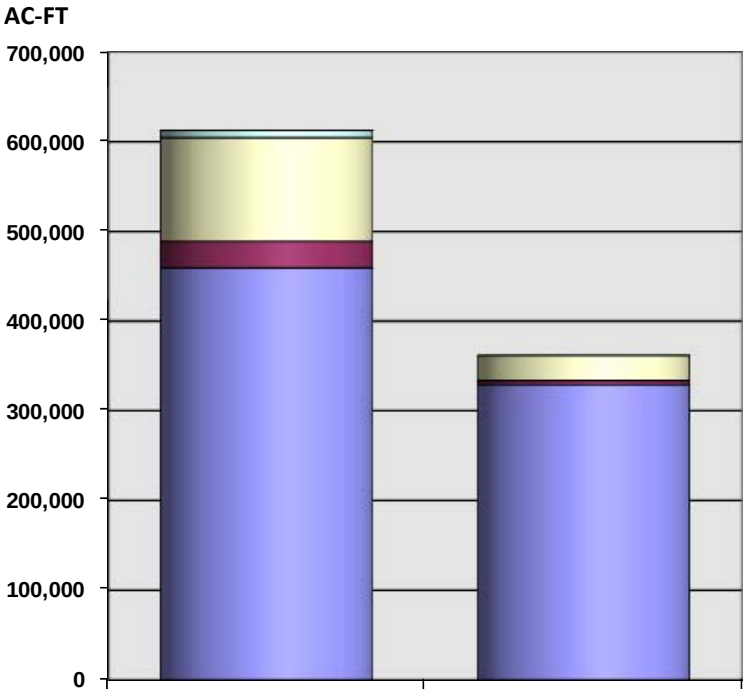
2.1.1.2 Groundwater Quality

As a new Activity called for in the 2006 update of the Plan, the Water Conservation District has been developing a monitoring plan for groundwater quality. This has involved evaluating potential sources for acquiring relevant data from programs that monitor groundwater quality in the Kaweah Basin. Many aspects of monitoring are under review including pertinent constituents to track, historical information, volume, and the frequency of the monitoring. The Water Conservation District will continue to evaluate and define useable information sources toward the implementation of groundwater quality data collection and tracking.

2.1.2 Surface Water

Surface water that flows into and through the Plan area comes from several different sources, primarily snowmelt and rain runoff from the Kaweah River watershed. Flows from the watershed are regulated in Lake Kaweah, which is owned and operated by the U.S. Army Corps of Engineers. Unregulated flows that enter the Kaweah River system include the following noted creeks: Cottonwood Creek, Dry Creek, Lewis Creek, Mehrten Creek, and Yokohl Creek. Additionally, imported surface water enters the Water Conservation District from the Central Valley Project's Friant-Kern Canal, the Kings River, or spills from Alta Irrigation District.

Figure 5: - Surface Water Flow Comparison within the Water Conservation District



	AVERAGE	2007-08
Kings River (LIWD)	8,668	0
CVP	115,949	29,094
Creek Flows	29,152	4,915
Terminus Flows	459,396	328,234

2.1.2.1 Surface Water Flows

Each year, the Kaweah and St. Johns Rivers Association monitors daily surface water flows and compiles that data into an Annual Report of the *Discharge of the Kaweah River and Canal Diversions*. This data is helpful in that the record of flow information, in combination with groundwater level data, can be used to evaluate effective use of surface water to the benefit of the groundwater basin.

The 2007-08 Water Year was below average in terms of runoff into Lake Kaweah with total inflow into the lake at 333,351 acre-feet, which was 78% of average runoff. The April through July 2008, inflow into Lake Kaweah was 225,155 acre-feet, which was 79% of average based on a 105-year average. Figure 5 summarizes the flows from the various sources into the Plan area for 2008 and compares the year to an average year. Plate 1 details the historical surface water flows within the Water Conservation District.

2.1.2.2 Surface Water Quality

Surface water quality monitoring, like groundwater quality monitoring, is a new Activity adopted as part of the 2006 update of the Plan. Accordingly, the Water Conservation District is developing a monitoring plan. The Kaweah River Sub-watershed (Sub-watershed) is part of the Southern San Joaquin Valley Water Quality Coalition, and has as its primary function the regular monitoring of surface water quality under the Irrigated Lands Regulatory Program (The Coalition and Sub-watershed's local representation is approved by the Central Valley

Regional Water Quality Control Board). This program monitors water column and sediment samples for issues of water quality degradation in waters of the State caused by agricultural practices. The Sub-watershed monitoring has been identified as one source of existing data that is a likely source from which to collect surface water quality data. The Water Conservation District will continue to evaluate and define additional useable sources of data within the Plan area.

2.1.3 Water Transfers

Surface water transfers can be beneficial or harmful to groundwater levels in the Plan area depending on how they are structured. The Watermaster of the Kaweah and St. Johns River, under direction of the Kaweah and St. Johns Rivers Association (Association), administers surface water transfers within the Association service area. The Water Conservation District also monitors transfers of surface water within its boundaries.

2.1.3.1 Intra-District Water Transfers

As the year 2008 was a below average year for the Kaweah Basin, water transfers within the Water Conservation District was an Activity for maximizing surface water usage. River units transferred water among themselves to improve timing of water supply to meet the demand schedules for their area. The Association's *Transfer Policy* defines the parameters and procedures for transfers, and the Watermaster implements those procedures, in an effort to avoid negative impacts to the Basin.

2.1.4 Inelastic Land Surface Subsidence

New to the Plan in its 2006 update, the Water Conservation District has been investigating available inelastic land surface subsidence data. An initial search in 2007 showed there is no recent, local data on subsidence. The Water Conservation District is currently discussing options in order to estimate the extent of the work necessary, the ability, and costs to perform such a study for the area of the Water Conservation District. Additionally, partners are being sought out as a way of sharing costs with another agency(s) and combining areas of the investigation.

2.1.5 Monitoring Protocols

Monitoring protocols set the framework for data collection and establish the accuracy and reliability of data that is fundamental to drive the Plan. Protocols are in place and guiding the collection of data for groundwater levels, surface water flows, and water transfers. During the planning stages of the Groundwater Quality, Surface Water Quality, and Inelastic Land Surface Subsidence Activities of the Plan, much thought and discussion has centered on the establishment of associated protocols. Protocols for these Activities help in the success of implementing the Plan.

2.2 Resource Protection

It is not enough that the Plan defines the importance of groundwater as a critical resource in the Kaweah Basin, but the Plan must also recognize the need to protect that resource from further degradation. As an Element of the Plan, Resource Protection identifies those Activities necessary to maintain the quantity and quality of the groundwater supply.

2.2.1 Well Abandonment and Construction Policies

Tulare and Kings Counties, in addition to some of the cities in the Plan area, have well ordinances that are established to provide for the permitting and oversight of construction, deepening, reconstruction, and abandonment of wells in their jurisdiction. The goals of the ordinances are to insure high quality groundwater and regulate the entry of substances into underground waters through the promulgation of policies and permits applying to well projects.

Noting an increasing trend in the number of contaminated groundwater wells, especially in the small public water systems of disadvantaged communities, Tulare County is working to identify funding assistance for a Well Maintenance & Abandonment Project. This project would promote a voluntary compliance program for owners and operators of private wells in areas of the County that are at risk due to localized contaminate issues. The program would include outreach and educational components, as well as a grant program to qualified individual applicants to cover the costs of proper abandonment, repair, alterations, or maintenance of high-risks wells. This Well Maintenance and Abandonment Project has been submitted, under the Kaweah Basin Integrated Regional Water Management Plan process, as a potential project for the Plan area.

2.3 Sustainability

Stabilizing groundwater levels has been a primary objective of the Plan in response to the historical overdraft of the groundwater resource of the area. This section contains the Activities utilized to achieve this goal through Groundwater Replenishment, Overdraft Mitigation, and Conjunctive Use.

2.3.1 Groundwater Replenishment

Groundwater Replenishment is an Activity of the Plan that often has considerable activity each year. The Water Conservation District operates and maintains recharge basins throughout the Plan area, and most of the channels within the Plan area are located within soil zones with high permeability characteristics. These facilities enable the Water Conservation District to capture and percolate floodwaters that might otherwise flow out of the Plan area, or cause flood damage. The Water Conservation District has established and will continue to develop programs that promote surface water use resulting in in-lieu groundwater recharge through reductions in groundwater pumping. Plate 2 presents a basin inventory and Plate 3 presents a map of the Water Conservation District that highlights recharge basins providing a visual overview of this extensive recharge system.

2.3.1.1 Distribution of District Owned Water

In 2007, the Water Conservation District transferred 860-acre feet of Kaweah River water to the adjacent Ivanhoe Irrigation District (IID) to help the IID alleviate some of the dry year surface water shortages they experience. In exchange, IID agreed to return CVP water in a later year at a return rate of 1.5 to 1.0. Through this arrangement, IID was able to reduce some of the groundwater pumping and the Kaweah Basin will end up with a net-gain due to water importation. As of 2008, conditions have not been present to allow IID to return any of the water under this exchange.

2.3.1.2 In-Lieu Recharge

The demand on the groundwater reservoir is proportionately reduced whenever surface water supplies can be acquired and used to satisfy irrigation demand.

- Mooney Grove Pond: The Water Conservation District executed an agreement in 2008 with the County of Tulare, Tulare Irrigation District (TID) and the City of Tulare to provide surface water to a three acre recreation/irrigation pond in the County's public park of Mooney Grove. Previously, the County solely supplied the pond by pumping groundwater. The agreement involved installing a pump and facilities off the adjacent TID North Branch Canal to supply the pond at times when surface water is available from the canal. The agreement additionally coordinated the purchase of the surface water between the County and the City, and established the parameters for diversion to the pond. The parties anticipate this relief of groundwater pumping will benefit the local groundwater supplies.

- Tulare Irrigation District Water Importation Program: 2008 was the eighth year of a minimum ten-year agreement between TID and the Water Conservation District in which the Water Conservation District pays TID a sum for each acre-foot of CVP water imported by TID so as to encourage TID to import water into the Kaweah Basin. The agreement was reached in order to lessen the financial impact to TID resulting from seepage losses in TID's Main Intake Canal that occurs as water is conveyed to the TID service area. The agreement also helps to maintain the historical recharge benefit to the Kaweah Basin that occurs as a result of the conveyance seepage.

CVP water imported by TID pursuant to the terms of the agreement is summarized in Table 1.

Table 1: TID CVP Importation (Calendar Year)

Year	Acre-Feet
2001	23,296
2002	40,026
2003	70,591
2004	34,650
2005	139,437
2006	100,849
2007	2,386
2008	**29,098**
Average	55,042

The groundwater basin is benefited by this agreement in two ways. The first is the expected increase in groundwater recharge quantities that will occur in the eastern portion of the Water Conservation District as the water is conveyed to TID. Secondly, a decrease in groundwater pumping in-lieu recharge in the central to westerly region of the Water Conservation District will occur because of the importation of an additional supply of surface water to TID's service area for irrigation purposes.

2.3.1.3 Construction and Operation of Facilities

Although one of the impacts of a dry year is to diminish recharge activity, it affords an improved opportunity for construction and coordination activities to occur without delays imposed by interference of wet conditions or water in the channels. The following is an account of the various improvements that occurred in 2008 that will directly benefit the Kaweah Basin's recharge ability in above normal to wet years:

- Anderson Basin Improvement (No.24): A valuable balancing basin at the tail end of the Farmers Ditch Company system, the 142-acre basin has limited capacity due to its depth in relation to the supply channel. Taking advantage of development projects in the area, the center cell of the basin continued to be excavated in trade for the dirt, improving on the ability to gravity feed water into the basin and increasing its capacity. The adjacent property owners, the College of Sequoias, have expressed interest in portions of the basin property for future development, and they have been discussing options with the Water Conservation District. This inquiry lead the Water Conservation District to request soil boring and permeability tests on the subject properties to allow for proper evaluation of the sites for percolation potential. The studies indicated the potential for slow percolation rates at the basin site and nearby land. This analysis will be factored into any future plans for improvements in the area relating to recharge activities.

- Oakes Basin Improvement (No.43): 2008 was the final year of a five-year exclusive agreement between Dunn's Sand and the Water Conservation District to excavate the 40-acre site for groundwater recharge, stormwater layoff for the City of Visalia, and habitat development and preservation purposes. The site is currently used for recharge activities and the Water Conservation District initiated some finishing operations at the basin in 2008 to shape the basin into its final contour. An additional inlet will be added to allow for stormwater layoff volumes, and a clay curtain will be installed to help prevent water levels from impacting the tree roots of an adjacent walnut orchard.

- Mooney Grove East Basin Site: The County of Tulare, Tulare Irrigation District (TID) and the Water Conservation District, have an agreement to develop an area for both recreation and recharge at an undeveloped location on the east end of Mooney Grove Park. In this arrangement, the two districts would excavate the 5 acre site and put in the necessary structures to gravity feed water from the adjacent TID canal for recharge and flood control spreading operations. The County is currently designing the recreation aspects of the basin area.

- Peoples Basin Site (No.99): The Water Conservation District continued preliminary engineering of the 40-acre Peoples Basin property to evaluate the basin development parameters necessary to establish this site as a recharge and stormwater layoff basin adjacent to the Lower Kaweah River upstream from the City of Visalia.

- Lakeside Basin (No.10): The Water Conservation District continues to work with several contractors to excavate additional dirt from the 187-acre Lakeside Basin as a source of fill dirt for development projects in the area. The work will serve to improve the capacity of the Lakeside Basin for managing flood flows and recharge.

- Kit Carson Basin Site: Kings County Water District, Lakeside Irrigation Water District, and the Water Conservation District continue to coordinate the purchase of a 160-acre recharge basin site in which it is anticipated that each entity will contribute an equal share of the acquisition costs. The basin will be useful for both recharge and flood control operations.

- Hutcheson West Basin (No.44) & Cameron Creek: A standing committee on water related projects, the Visalia Water Management Committee has reserved the amount of $250,000 toward the design and construction of a check dam in Cameron Creek intended to enhance in-channel recharge and to allow for diversion of flow into the adjacent 5-acre Hutcheson West Basin site. Tulare Irrigation District is designing an additional diversion inlet into the creek to expand the headwork's capacity. After the inlet expansion, channel flow trials will be conducted in the Creek to establish capacity information and develop operating criteria for the check structure. The Water Conservation District has excavated the basin and installed an inlet to allow diversions off of Cameron Creek for recharge. Finish work remains to finalize the shape of the basin.

2.3.2 Overdraft Mitigation

Since the 1950's, the Water Conservation District has observed declining groundwater levels and the Kaweah Basin has been identified by the California Department of Water Resources as "…being in a critical condition of overdraft." These conditions were confirmed in the Water Conservation District's Water Resources Investigation performed by Fugro-West in 2003. Overdraft mitigation has been a focal point of the Plan with activities focused on actions that have direct, positive impact on the groundwater table.

2.3.2.1 Water Conservation:

The Water Conservation District promotes the beneficial use of water by the promotion, sponsorship, and participation in educational programs that focus on improving the understanding of water needs and concerns both locally and statewide.

- Education and Ag Together: The Water Conservation District continues to participate and sponsor local schoolteachers in the Education and Ag Together Foundation (EAT Foundation) class, Ag II "It's all about Water," for the summer of 2008. This involved two sessions of a two-day class where some of the topics were water law, power generation, dams, and rivers. The class focuses on past and present California water issues and California water supply and demand. The Water Conservation District is proud to be an annual sponsor of this class, believing it is important that Californians understand where water comes from and how water gets to the faucet.

- Central Valley Tour: The Water Conservation District again participated and helped sponsor the Water Education Foundation's Central Valley Tour in the Spring of 2008. The Central Valley Tour is a 3-day tour that travels the length of the San Joaquin Valley, giving participants interested in California water a clear understanding of the State Water Project and Central Valley Project. Stops include the Kern County Water Bank, the San Joaquin River, Mendota Pool, Friant Dam, San Luis National Wildlife Refuge, San Luis Reservoir, as well as the Kaweah Basin. Issues of growth, water supply, groundwater banking, wetlands, salmon restoration and agricultural water supply and drainage were discussed on this tour, which began and ended in Northern California.

- Farm Water Leadership Tour: Each year members of California Farm Bureau's Leadership Program participate on a three-day tour through the San Joaquin Valley and visit with farmers and water district officials, guided by the California Farm Water Coalition. Annually, the tour stops by Lake Kaweah where Water Conservation District staff takes the tour group to the spillway of Terminus Dam to show off the fusegates that allow for an increase in storage at Lake Kaweah. They discuss the improved water management ability that the increased storage affords to the U.S. Army Corps of Engineers in its flood management operations, and the benefits to irrigation water management that Kaweah River water entitlement holders have realized from the project.

2.3.2.2 Additional Water Supply & Storage

Although Water Conservation District receives a surface supply of water from the Kaweah River system, the quantity received can vary dramatically from year to year. Annually an effort is made to import water from the Central Valley Project, the Kings River, or other sources to try and supplement the Kaweah River supply.

- Resources Exchange Agreement: The Water Conservation District actively pursues importation of water to stabilize the amount of water delivered to the Basin and reduce the groundwater overdraft. Historically, the Water Conservation District has regularly imported CVP water through Temporary Contracts or other Non-Long Term Contracts with the U.S. Bureau of Reclamation (Bureau) in an effort to protect and enhance available groundwater resources within the Kaweah River Basin.

  In April of 2004, the Water Conservation District entered into a Resource Exchange Agreement (Agreement) with Ivanhoe Irrigation District (IID) that creates an exchange of water assets, which will provide advantages to both parties and the Kaweah Basin as a whole. The Agreement, in part, assigns a portion of the Water Conservation District's conservation storage space in Lake Kaweah and a portion of the Water Conservation District's Longs Canal water supply (an upper Kaweah River water supply) to IID. In return, the Agreement involves an assignment of 1,200-acre-feet of CVP Class 1 contract water supply and 7,400 acre-feet of CVP Class 2 contract water supply from the IID's Long-Term Contract to the Water Conservation District.

  The Agreement improves IID's ability to keep surface water competitively priced with local groundwater and retain long-term reliability of its surface water. For the Water Conservation District, the Agreement improves its ability to continue to receive CVP water, as source of alternative surface water supply.
  The Agreement requires a number of steps to accomplish the exchange of water assets between the parties, the most significant being a partial assignment of IID's Class 1 and Class 2 CVP Contract water supply to the Water Conservation District. This will involve National Environmental Policy Act compliance and consultation with the U.S. Fish and Wildlife Service for Endangered Species Act compliance. Both the Water Conservation District and IID have assessed the environmental impacts through their own separate California Environmental Quality Act processes. It is anticipated that the Agreement can be implemented in the 2009 water season.

- Cloud Seeding: The Water Conservation District has contracted with cloud seeding services going back as early as 1975 to perform cloud seeding operations over the Kaweah River Watershed. This ongoing effort is designated as *The Kaweah River Weather Resources Management Program*. In 2008, Atmospherics International, Inc. (AII) contracted for both seeding flights and ground generators in a program over the Kaweah River Target Area. The Water Conservation District's contract with AII for seeding begins November 1 and can extend through May. The seeding activities are limited to this period to provide the greatest benefit to the watershed's snowpack while considering costs.

  For a second year, the Water Conservation District has initiated a trial Summer Cloud Seeding Program to evaluate the ability to capitalize on summer storms that pass through the watershed. Seeding attempts in the summer of 2007 proved to be ineffective due to weak storms, again in 2008 summer cloud seeding was not productive, but the Water Conservation District resolved to evaluate the trial program for a few years before coming to any final conclusions on the program's merits.

  The Water Conservation District acknowledges that quantifying the benefits of cloud seeding for expected precipitation improvements is difficult. The weather modification program is just one of the Water Conservation District's continuing efforts to provide any additional water that would assist in reducing the

long-term groundwater basin overdraft condition. The Water Conservation District's view is that every economical and feasible opportunity to promote additional water supplies into the region must be considered.

- City of Visalia Water Importation Agreement: Developed from groundwater overdraft discussions within the Visalia Water Management Committee, the City of Visalia (City) and California Water Service Company (Cal Water) arranged for the City to acquire a total of 10,000-acre feet of water over a 7-year period from Cal Water's City of Bakersfield water supply. The water supply is stored in a Kern County water bank and requires a series of exchanges to accomplish delivery of the water. The water will be used to recharge groundwater in areas beneficial to the City to help offset pumping. In 2008, all of the necessary agreements were fully executed and The City and Water Conservation District now stand ready to implement recharge activities when conditions are present.

2.3.3 Conjunctive Use

Since 2007 was a critically dry water year, the Kaweah Basin landowners benefited greatly from the recharge activities that took place in the previous wet water years of 2005 and 2006. 2008 was a below average year at 78%, and although it did not impact the groundwater table as much as 2007, it did add to the overdraft status. Table 2 summarizes the recharge activities in those years and their apparent effect on the groundwater levels. Further information on the recharge activities in these years is available in the 2005, 2006, and 2007 Annual Groundwater Management Plan Reports.

Table 2: 2005-2008 Groundwater Response Summary

Year	Lake Kaweah Inflow - % Avg.	KDWCD Water Importation - AF	Recharge Basins Utilized - Ea.	Recharge Basin Percolation - AF*	Recharge in Channels - AF*	Fall Season Groundwater Avg. Depth Change - Ft.
2005	145	108,500	34	36,000	267,200	+13.4
2006	163	56,600	30	149,000	237,000	+12.9
2007	39	0	2	2,719	66,000	-24.6
2008	78	0	17	33,013	124,258	-11.3

*estimated

This simple summary illustrates the dramatic effect the climatic conditions of the water year, at least in terms of precipitation, can have on the groundwater system in the Kaweah Basin. Figure 3 further illustrates the historical response of the groundwater table to the nature of the water year.

2.4 Stakeholder Involvement

The status of local groundwater supplies has an impact on the entire Kaweah Basin; therefore, the Plan is comprised of Activities involving numerous coordinating entities, and other interested parties, who take an active role in the Plan to strengthen the effectiveness of the Plan.

2.4.1 Memorandum of Understanding

In accordance with the Plan objectives, the Water Conservation District has incorporated participation of many entities in the Plan through *Memorandums of Understanding* (MOU). The Plan participants are listed in Table 3 below, and their service area in relation to the Plan area is shown on Plate 4.

Table 3: Current Plan Participants

Entity	MOU Date
Consolidated Peoples Ditch Company	1995
St. Johns Water District	1995
Tulare Irrigation District	1996
Lakeside Ditch Company	1998
Lakeside Irrigation Water District	1998
Kings County Water District	2002
City of Visalia	2002
City of Farmersville	2003
California Water Service Company	2004
City of Tulare	2004
Ivanhoe Irrigation District	2004
Stone Corral Irrigation District	2005
City of Woodlake	2005
City of Lindsay	2006
Exeter Irrigation District	2006
County of Tulare	2007

It is important to note that participants Ivanhoe Irrigation District, Stone Corral Irrigation District, the City of Woodlake, the City of Lindsay, and Exeter Irrigation District are outside of the Plan boundary, but as part of the Kaweah River Basin, their activities have potential impact on groundwater within the Plan area.

The Water Conservation District continues to work with additional entities to encourage their participation in the Plan. The Plan also takes into consideration those entities that have lands within the Plan area that want to manage groundwater under their own separate plan. This is explained in more detail in previous Annual Reports.

2.4.2 Advisory Committee

One of the defined Plan Activities is an annual meeting with participants and interested parties to review and discuss groundwater conditions, water supplies, groundwater recharge, recharge basin development, and other activities related to the Plan. The Advisory Committee did not meet in 2008 due to a delay in producing the Annual GMP Report. The Annual GMP Report for the year 2007 was completed in December of 2008 after undergoing a major revision after the update of the GMP itself in late 2006.

2.4.3 Relationships with Other Agencies

The Plan encourages coordination with agencies and other interests that share the groundwater resource in an effort to coordinate information and data, provide relevant programs, and allocate funds.

- AB 303 Grant Application: A strategic activity of the Plan is to coordinate with other agencies by combining interests, concerns, and resources to improve groundwater conditions in the Basin. In 2007, the Water Conservation District, Ivanhoe Irrigation District, Lindsay-Strathmore Irrigation District, Tulare Irrigation District, and Exeter Irrigation District applied for an AB 303 Grant from the California Department of Water Resources (DWR) to fund a feasibility study for a joint water-banking project. The application requests $250,000 toward a $400,000 project study to examine the feasibility of banking available water supplies at a local to site. The proposed study consists of soil testing for suitability, groundwater monitoring well data compilation and evaluation, groundwater storage/recovery modeling, water storage/recovery assessment and design considerations, and assessment of proposed delivery/distribution facilities. The AB 303 Grants were awarded in early 2008 and the Water Conservation District did not rank high enough for to receive any moneys for the evaluation of the banking project. The partnering entities will evaluate how to proceed with the project absent the grant moneys.

- District HCP/NCCP Project: Following the initiation of the *1993 Kaweah River Delta Corridor Enhancement Study*, the Water Conservation District elected to pursue the development of a Habitat *Conservation Plan* (HCP). A HCP comprehensively addresses the long-term habitat and species impacts beyond what would normally be handled on a project-by-project basis, allowing for comprehensive management of the water needs of the area.

  The development of a HCP offers many benefits toward the construction and operation of groundwater recharge and storm water layoff basins, construction and maintenance of water conveyance systems, and development of habitat restoration sites. Management of lands under the HCP will help maximize the value of both water and habitat, deliver greater cumulative benefits to habitat and species recovery within the Basin, and contribute toward overall Lower San Joaquin Valley habitat and species recovery efforts.

  The Water Conservation District has received approval for the Plan of Study. The Plan of Study is divided into three phases: a) Project Development, b) HCP Development, and c) environmental analysis and review. The Project Development Phase includes those efforts needed to fully develop the scope and nature of the HCP, as well as integration of State of California, Endangered Species Act requirements. The HCP Development Phase will take elements from the Plan of Study and the Project Development Phase to

form the content of the HCP document and the basis for a Section 10(a) Incidental Take Permit and associated State action. The final phase will develop appropriate environmental documentation in satisfaction of NEPA and CEQA guidelines for the covered actions within the proposed HCP.

The Water Conservation District anticipates the HCP will help to streamline the process for developing projects within the Kaweah River Basin and accomplish goals of the Plan.

- Integrated Regional Water Management Planning: Responding to calls from the State to integrate water resources management across jurisdictional boundaries, the Water Conservation District has served as the lead agency in developing an Integrated Regional Water Management Plan (IRWMP) for the Kaweah Basin. Originating in early 2007, a local stakeholder group has been gathering monthly, stepping through the formation of a Kaweah Basin IRWMP.

  The District has coordinated a functionally equivalent Water Management Plan for the area for over 20 years, and recent efforts have been to formalize this Plan. The first step has been developing a *Memorandum of Understanding* to establish the IRWMP between five local entities, and the second has been to set a structure of participation and establish a scoring mechanism to rate projects presented to the IRWMP for funding. The overriding focus of the group is to establish long-term water management goals and guidelines for the area that will promulgate multi-stakeholder, high cost-benefit projects that address multiple water issues and related needs of the area. The stakeholder group continued to work through issues to define the Kaweah IRWMP in 2008, and was able to develop an initial rough outline of a formalized Plan.

- The Tulare County Water Commission: In 2007, the Tulare County Board of Supervisors re-formed the Tulare County Water Commission to advise the Board of Supervisors on issues of water supply and quality, watershed management, wastewater disposal, flood control, and growth management. The Tulare County Water Commission is designed to examine a wide variety of water issues that impact Tulare County. The Water Commission serves as an advisory body to the Tulare County Board of Supervisors. Listed below are some of the issues reviewed by the Water Commission in 2008:

  San Joaquin River Restoration Status
  Rural Community Drinking Water System Issues
  Invasive Species Threats
  Tulare County AB 303 Grant Award
  California Water Institute Activities
  Current Water Legislation Activities
  DWR Integrated Water Resource Information System (IWRIS) Review
  Nitrate Concerns and Management Plans
  Waste Water Treatment Technology

2.5 Planning and Management

A successful program is often the result of planning and management, which guide and focus the direction, and therefore the effectiveness, of a program. Below is a discussion of key Plan activities that have an important role in effectively managing groundwater in the Basin.

2.5.1 Land Use Planning

Cities and Counties within the Plan area oversee land use and zoning the Water Conservation District monitors, guides, and advise the entities with regard to ordinances and policies that protect and enhance groundwater quality and supply.

- County General Plan Update: The County of Tulare is in the process of updating its General Plan and the Water Conservation District has been instrumental in its development relating to County water issues. The parameters of the General Plan are critical to the County and should have a part in addressing impacts to water supply, water quality and groundwater overdraft. The County released a Draft Environmental Impact Report in 2008 for public comment.

- Yokohl Ranch Development Proposal: The County of Tulare is currently reviewing a proposal for a new city in the rangeland foothills of the Kaweah River watershed. The proposed Yokohl Ranch Development has an eventual build out of 10,000 homes plus supporting amenities. The Water Conservation District has been in discussions with the developer and the County to assure potential impacts to flood control, surface water supply, groundwater supply, and water quality are sufficiently addressed. The project will involve amendment to the current *Foothill Growth Management Plan* and to current zoning.

2.5.2 Groundwater Model

The Plan recognizes groundwater modeling as an important planning and management tool to effectively understand the groundwater characteristics of the Plan area.

- District Groundwater Model: A Numerical Groundwater Flow Model for the Water Conservation District was completed and calibrated in 2005 after the development of a model was recommended in the *2003 Water Resources Investigation* by Fugro-West, Inc.. The model has been calibrated and stands ready to perform various water supply scenarios toward future programs to better manage groundwater resources within the Kaweah Basin.

- City of Visalia Groundwater Model: The Water Conservation District, the City of Visalia, and California Water Service Company have developed parameters with Fugro-West, Inc. to construct a Visalia Numerical Groundwater Flow Model. Fugro-West is refining the scale of the initial Water Conservation District-wide study to the area of the City of Visalia at a higher resolution. This Model will improve the ability to study the groundwater conditions within the City region, better understand the potential benefits of contemplated recharge efforts, and help the City understand the potential impacts of future development. The total Model project cost is estimated at $210,000 with the Water Conservation District contributing $70,000 and the City contributing $140,000 from the City budget and groundwater impact and mitigation funds. The City has specified the parameters necessary for the scenarios to be run and Fugro continues to calibrate the model, preparing it for model runs.

2.5.3 Groundwater Report – Annual Groundwater Management Plan Report

This 2008 Annual Report summarizes the current groundwater conditions and provides an over-view of Plan Activities. The Water Conservation District has committed to producing reports annually and has on file reports from 1995 when the Plan was first developed.

2.5.4 Plan Re-Evaluation

There are currently no areas identified as needing modification. The Plan will continue to be evaluated to seek areas of improvement, clarification, or development that would be beneficial to the goals of the Plan. Periodic Plan re-evaluation will occur at an interval of not more than 5 years.

2.5.5 Program Funding and Fees

Funding for Plan Activities comes primarily from three sources: 1) the Water Conservation District's budget, 2) cooperative agreements with other coordinating agencies, or 3) grants available for groundwater management.

Although the general management activities of the Plan are currently funded through the Water Conservation District's budget, numerous projects are underway, that are based on partnerships between the Water Conservation District and other entities, and includes cost-sharing elements. The Water Conservation District has historically received multiple funding grants for groundwater management efforts and will continue in such efforts in the future. The Water Conservation District also anticipates competing for other grant funds through the Kaweah Basin IRWMP process.

3.0 CONCLUSION

In evaluating the Groundwater Management Plan Activities that took place in 2008, the following conclusions can be drawn.

3.1 Plan Goal

The updated Plan has been a catalyst to improve the efficiency and effectiveness of groundwater management in the area, and it is clear the Activities conducted under the Plan impact the ability to sustain a high quality groundwater supply for agricultural, environmental, and urban uses for the future. Continuation of these Activities by the Plan participants will be necessary to stabilize, or reverse, the overdraft conditions of the Kaweah Basin. The following discussion summarizes this year's activities for the five Plan Elements, which are the basis of the Plan.

3.1.1 Monitoring Program

The very core of the Plan is the groundwater monitoring that has been performed for over 50 years with data collection that allows the Water Conservation District and Stakeholders to evaluate groundwater conditions related to meeting water demands in the Plan area. The challenge will be to incorporate the new monitoring activities for water quality and subsidence. These new Activities will require additional research into identifying sources of accurate and reliable data that defines Kaweah Basin conditions.

3.1.2 Resource Protection

Given the nature of the established well ordinances of the counties and cities within the Plan area, some basics of groundwater protection have been implemented. The development of additional programs, like those proposed by Tulare County to broaden understanding of the water quality threats to groundwater, will continue to improve the ability to minimize adverse groundwater quality issues in the Plan area.

3.1.3 Sustainability

Sustainability is an Element with probably the most activity in the Plan with numerous projects completed and underway that advanced, or has the potential to advance, the Water Conservation District's ability to manage groundwater supplies. This is accomplished through the numerous surface water management programs, recharge basin capacity improvements, water management cooperative agreements, and water educational programs performed in 2008.

3.1.4 Stakeholder Involvement

Growing in participation since the Plan's inception in 1995, there are now sixteen participants that play an active role in the planning and evaluation of groundwater management. Implementing the activities of the Plan, the Water Conservation District coordinated with multiple agencies in and around the Plan area to maximize benefits and minimize expenditures for Plan activities. Many coordinating efforts are underway that will broaden the participation and scope of planning efforts that will be effective in better managing water and utilize more dollars for projects to improve water management.

3.1.5 Planning and Management

An array of local planning processes, guidelines, and supporting funds are available to coordinate the activities of the Plan. This Annual Report acts as a valuable tool to record the activities, progress, and the general effectiveness of the Plan. It is envisioned that the Annual Report will bring to light needed changes and serve as the impetus to modify the Plan to allow it to meet its goals of providing a sustainable, high quality supply of groundwater for agricultural, environmental, and urban uses into the future.

3.2 Plan Component Changes

The Plan is designed to be flexible, allowing updates to be made as needed and is based principally on the evaluation of information that is gathered through the monitoring programs. Since the update, the Plan has been evaluated as effective, and there have not been any component changes identified for revision. Elements of the Plan will be annually evaluated to seek clarification or development that would improve the effectiveness of the Plan in meeting its defined Goals.

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GRANT APPLICATION, AB 303 LOCAL GROUNDWATER ASSISTANCE PROGRAM - December 2007
Kaweah Delta Water Conservation District

TULARE COUNTY GENERAL PLAN, 2025 - (DRAFT)
County of Tulare, Resource Management Agency

WATER RESOURCES INVESTIGATION, December 2003 - Revised July 2007
Kaweah Delta Water Conservation District

The preceding documents are on file at, or can be located through, the Kaweah Delta Water Conservation District office.
Please, call (559) 747-5601, or write to 2975 N. Farmersville Blvd, Farmersville, CA 93223.

PLATES

Plate 1: Historical Surface Waters Within the Water Conservation District

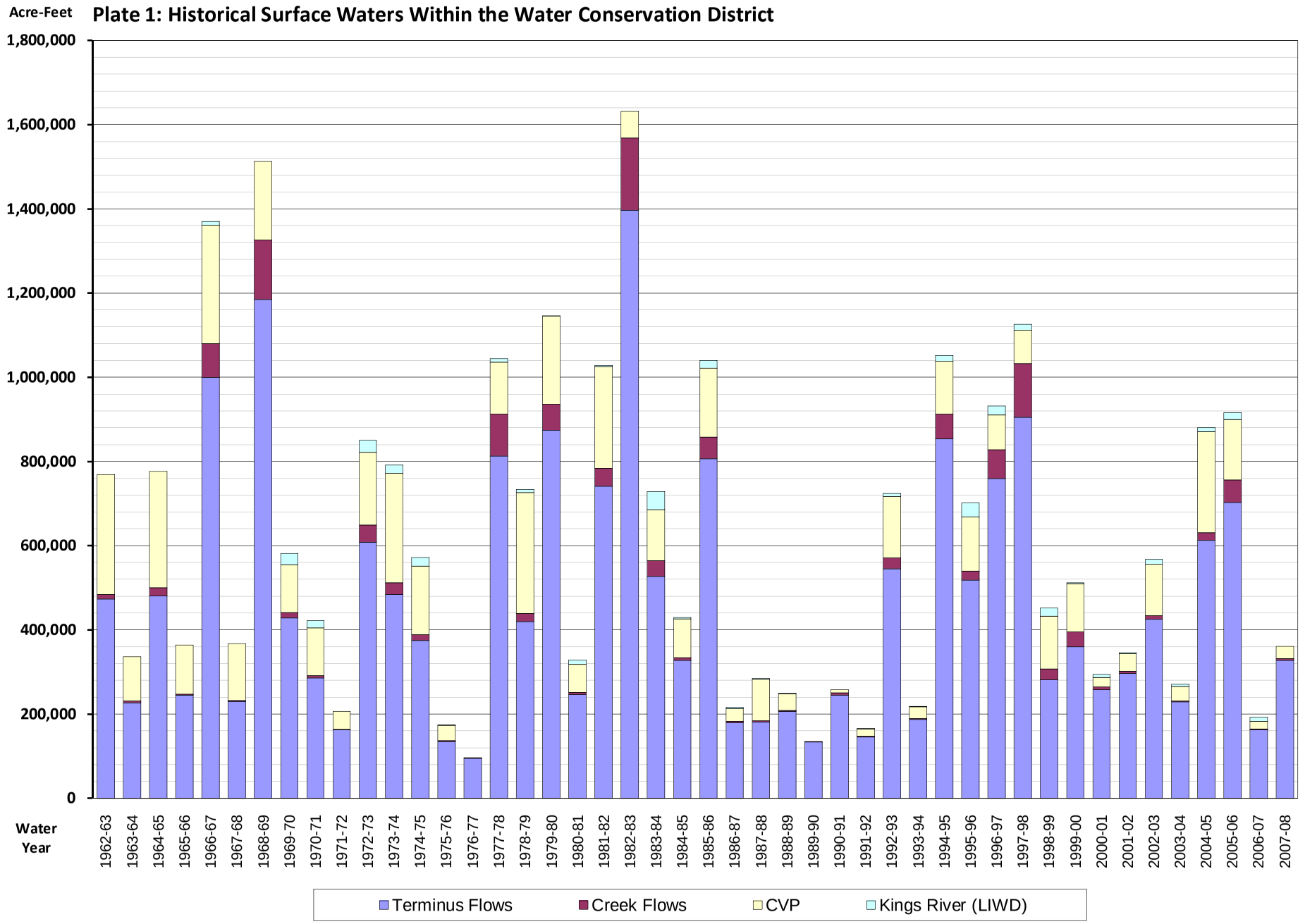


PLATE 2: Kaweah Delta Water Conservation District

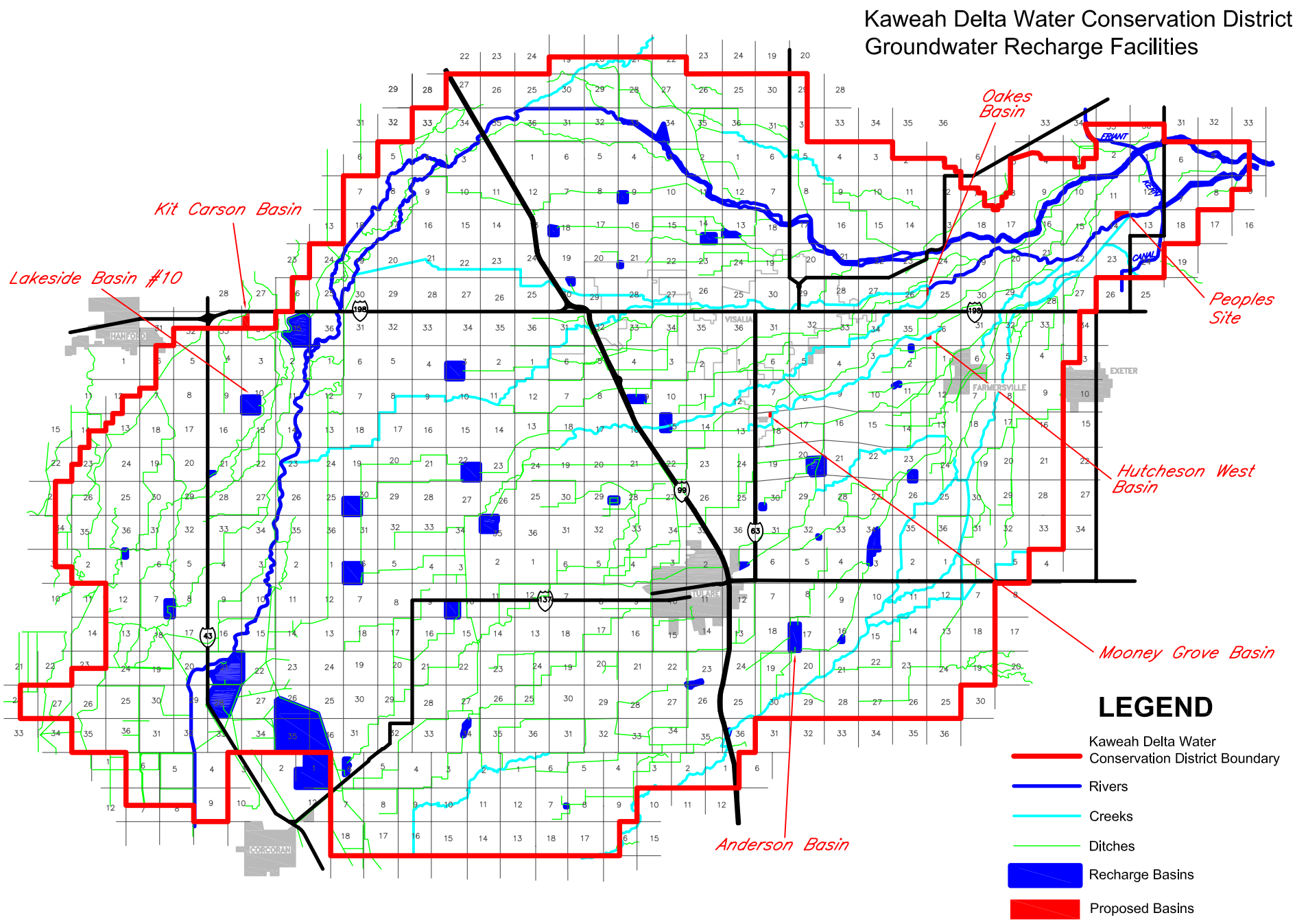
Available Recharge Basin Inventory

Basin Name	No.	River System	Supply Channel	Owner	Acreage	Capacity (A.F.)	Inflow Capacity (CFS)	Perc A.F. per Day*
Doris	25	(either)	Cameron Creek	KDWCD & TID	15	60	30	7
Hutcheson West	44	(either)	Cameron Creek	Kaweah Delta WCD	5.5	25	16	2
Mooney East	n/a	(either)	Cameron Creek	County of Tulare	6	n/a	n/a	n/a
Hutcheson East	45	(either)	Tulare ID Canal	Kaweah Delta WCD	4.4	n/a	n/a	n/a
Enterprise	2	(either)	Tulare ID Canal	Kaweah Delta WCD	20	100	20	8
Colpien	3	(either)	Tulare ID Canal	Kaweah Delta WCD	160	640	180	60
Abercrombie	14	(either)	Tulare ID Canal	Kaweah Delta WCD	20	80	20	5
Creamline	16	(either)	Tulare ID Canal	Kaweah Delta & Tulare ID	153	535	n/a	85
Mooney Pond	n/a	(either)	Tulare ID Canal	County of Tulare	3	n/a	n/a	n/a
Franks	17	(either)	Tulare ID Canal	Kaweah Delta WCD	40	160	n/a	6
Guinn	18	(either)	Tulare ID Canal	Kaweah Delta WCD	168	672	70	25
Franks	19	(either)	Tulare ID Canal	Kaweah Delta WCD	130	520	60	16
Wilbur	20	(either)	Tulare ID Canal	KDWCD & TID	20	100	50	5
Oakes	43	Kaweah	Lower Kaweah River	Kaweah Delta WCD	40.9	200	40	7
Bill Clark	32	Kaweah	Consolidated PDC	Private Landowner	2	4	2	1
Elk Bayou	106	Kaweah	Elk Bayou Creek	County of Tulare	6	22	n/a	3
Nelson Pit	13	Kaweah	Evans Ditch	Kaweah Delta WCD	34	340	10	14
Art Shannon	1	Kaweah	Farmers Ditch	Kaweah Delta WCD	33.8	270	20	30
Gary Shannon	7	Kaweah	Farmers Ditch	Kaweah Delta WCD	5	20	5	5
Gordon Shannon	21	Kaweah	Farmers Ditch	Kaweah Delta WCD	15	90	45	6
Anderson	24	Kaweah	Farmers Ditch	Kaweah Delta WCD	147	588	50	20
Ellis	27	Kaweah	Farmers Ditch	Private Landowner	3	30	15	4
Nunes	29	Kaweah	Farmers Ditch	Kaweah Delta WCD	40	240	50	30
Sunset	95	Kaweah	Inside Creek	Kaweah Delta WCD	103	320	n/a	60
Creekside	n/a	Kaweah	Mill Creek	City of Visalia	8	59.7	33	1
Goshen Pit	12	Kaweah	North Mill Creek	City of Visalia	12	185	10	5
Machado	6	Kaweah	Packwood Creek	Kaweah Delta WCD	166	665	120	80
Corcoran Hwy.	8	Kaweah	Packwood Creek	Kaweah Delta WCD	120	480	150	40
Tagus	11	Kaweah	Packwood Creek	Kaweah Delta WCD	80	800	250	150
Packwood	4	Kaweah	South Mill Creek	City of Visalia	160	800	125	35
Corcoran Basins 1,2,3	n/a	St. Johns	Cross Creek	Corcoran DC	2400	9000	700	200
Doe-Goshen	28	St. Johns	Goshen Ditch	Private Landowner	20	80	25	10
Harrell	30	St. Johns	Harrell No. 1	Private Landowner	50	200	35	40
Lakeside	10	St. Johns	Lakeside Ditch	Kaweah Delta WCD	187	800	75	150
Howe	15	St. Johns	Lakeside Ditch	Kaweah Delta WCD	52.5	208	50	15
Green	23	St. Johns	Lakeside Ditch	Kaweah Delta WCD	4	12	6	1
Lakeside Basin No. 1	n/a	St. Johns	Lakeside Ditch	Lakeside DC	320	1000	289	60
Lakeside Basin No. 2	n/a	St. Johns	Lakeside Ditch	Lakeside DC	64	180	20	30
Willow School	5	St. Johns	Modoc Ditch	Modoc Ditch Co.	50	200	25	25
Goshen (Doe)	9	St. Johns	Modoc Ditch	Private Landowner	40	160	15	10
Shannon-Modoc	22	St. Johns	Modoc Ditch	Private Landowner	10	50	20	4
Doe-Ritchie	26	St. Johns	Modoc Ditch	Private Landowner	20	80	10	10
					4938			

Developing Recharge Basin Inventory

Basin Name	No.	River System	Supply Channel	Owner	Acreage	Capacity (A.F.)	Inflow Capacity (CFS)	Perc A.F. per Day*
Paregien	108	Kaweah	Deep Creek	Kaweah Delta WCD	78.5	n/a	n/a	n/a
Hannah South	n/a	Kaweah	Lower Kaweah	Private Landowner	n/a	n/a	n/a	n/a
Peoples	99	Kaweah	Lower Kaweah River	Kaweah Delta WCD	40	n/a	n/a	n/a
Hannah Ranch	109	Kaweah	Lower Kaweah River	Kaweah Delta WCD	398	n/a	n/a	n/a
Curtis	107	St. Johns	St. Johns River	Kaweah Delta WCD	95.6	n/a	n/a	n/a
S/K-Vander Stelt	111	St. Johns	St. Johns River	City of Visalia	94.7	n/a	n/a	n/a

* Estimate only


Kaweah Delta Water Conservation District
Groundwater Recharge Facilities
Oakes Basin
Kit Carson Basin
Lakeside Basin #10
Peoples Site
Hutcheson West Basin
Mooney Grove Basin
Anderson Basin
LEGEND
Kaweah Delta Water Conservation District Boundary
Rivers
Creeks
Ditches
Recharge Basins
Proposed Basins

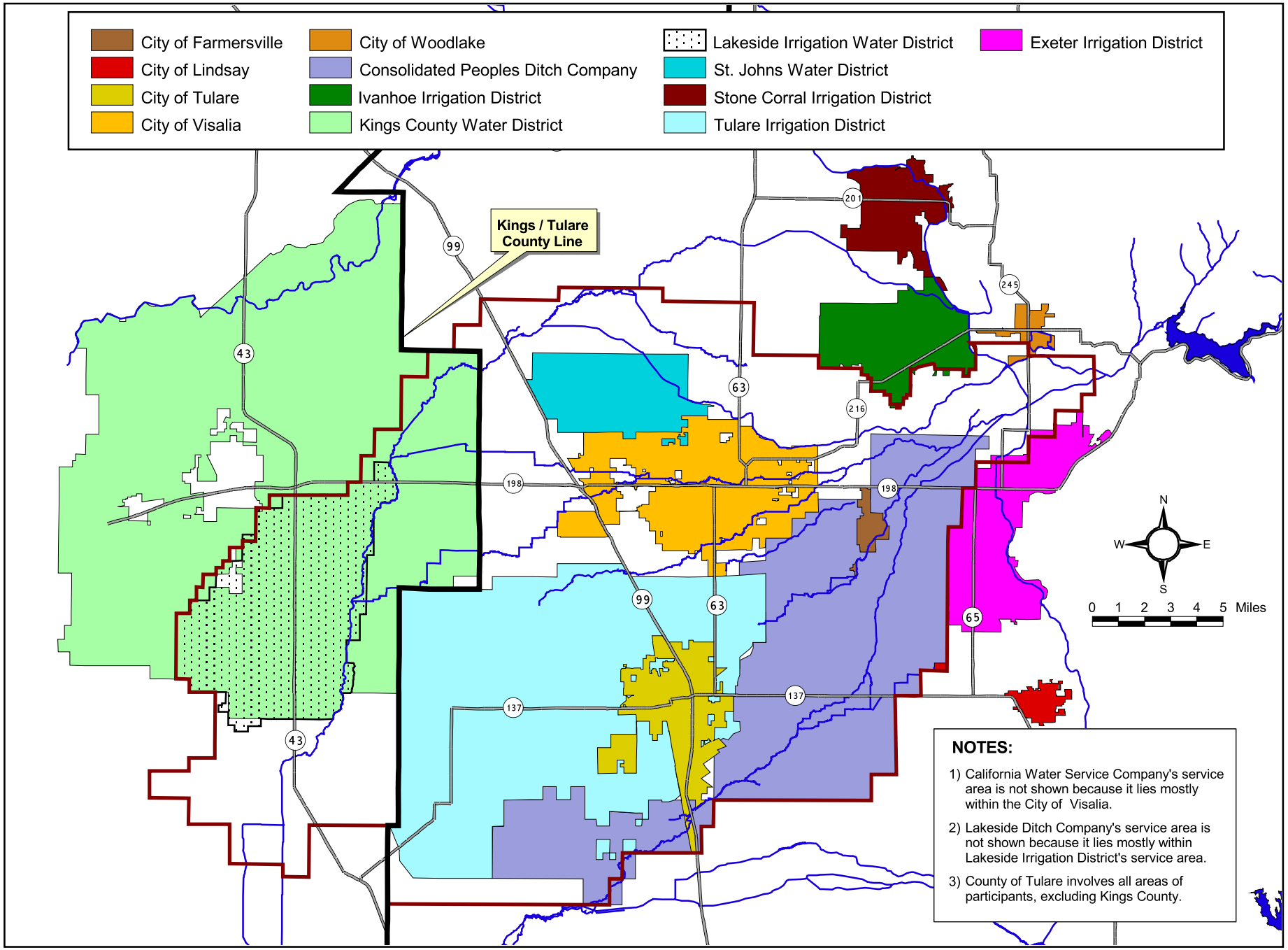


PLATE 4: Groundwater Management Plan Area

APPENDIX -A-

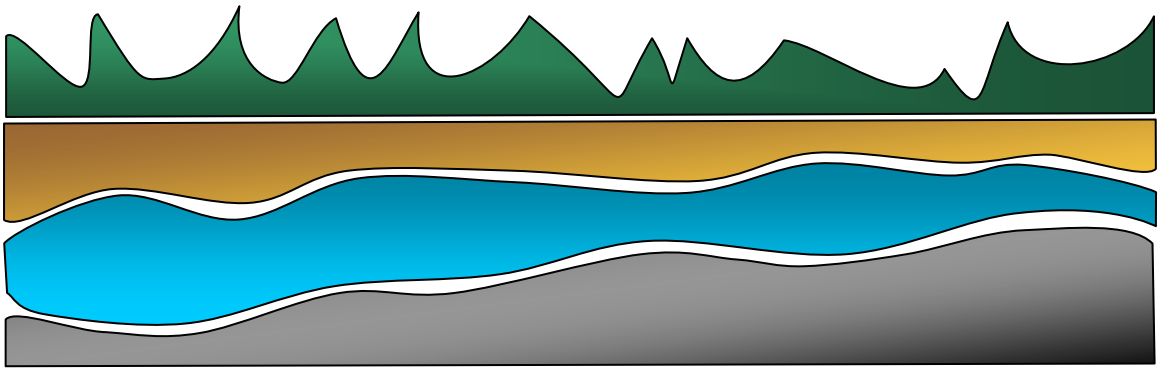
2008 Annual Groundwater Report

KAWEAH DELTA

Water Conservation

DISTRICT

2008 ANNUAL GROUNDWATER REPORT



2008 ANNUAL GROUNDWATER REPORT

This report has been prepared by Kaweah Delta Water Conservation District and presents groundwater measurements that were taken throughout the District. This information is intended to provide the District Board of Directors and participants with groundwater data that will allow for the evaluation of past and current groundwater conditions within the District.

The groundwater measurements were taken in the months of February and October for spring and fall, respectively, at wells located within the Kaweah Delta Water Conservation District boundaries. The data was collected by Kaweah Delta Water Conservation District, Kings County Water District and Tulare Irrigation District.

Many groundwater measurements were taken, but only the groundwater depths from well sites in each respective season of 2007 and 2008 were compared within the District. The spring 2008 average comparable depth of groundwater was approximately 109.5 ft., which reflected an average increase in groundwater depth of 16.2 ft. from the prior year. The fall 2008 average comparable depth of groundwater was approximately 122.8 ft., which reflected an average increase in groundwater depth of 11.3 ft. from the prior year.

TABLE OF CONTENTS

KAWEAH DELTA WATER CONSERVATION DISTRICT

WATER YEAR 2007 - 2008
PRELIMINARY REPORT

WATER SUPPLY (AC-FT)

TERMINUS INFLOW	333,351
CREEK FLOW	4,914
CVP	29,098
KINGS RIVER	0
TOTAL	**367,363**

Terminus inflow of 333,351 AF was 78% of the long term average, beginning at the 1904 Water Year.

The April - July flow of 225,155 AF was 79% of the long term April - July average, beginning at the 1904 Water Year.

Creek Flow is the water year totals of Dry Creek, Yokohl Creek, and Cottonwood Creek.

KAWEAH DELTA WATER CONSERVATION DISTRICT

AVERAGE GROUND WATER CHANGES (AGENCY)

SPRING 2007 - 2008 COMPARISON

AGENCY CODE	NUMBER OF WELLS MEASURED SPRING 2008	NUMBER OF WELLS COMPARED TO SPRING 2007	AVERAGE CHANGE IN GROUNDWATER DEPTH
5129	15	15	2.0
5603	103	80	-15.1
5604	82	79	-18.1
5627	18	16	-29.6
COMBINED	**218**	**190**	**-16.2**

FALL 2007 - 2008 COMPARISON

AGENCY CODE	NUMBER OF WELLS MEASURED FALL 2008	NUMBER OF WELLS COMPARED TO FALL 2007	AVERAGE CHANGE IN GROUNDWATER DEPTH
5129	17	16	-11.1
5603	90	85	-8.2
5604	90	88	-12.7
5627	18	17	-18.9
COMBINED	**215**	**206**	**-11.3**

AGENCY CODE	AGENCY DESCRIPTION
5129	Kings County Water District
5603	Kaweah Delta Water Conservation District
5604	Tulare Irrigation District
5627	Lakeside Irrigation Water District

KAWEAH DELTA WATER CONSERVATION DISTRICT

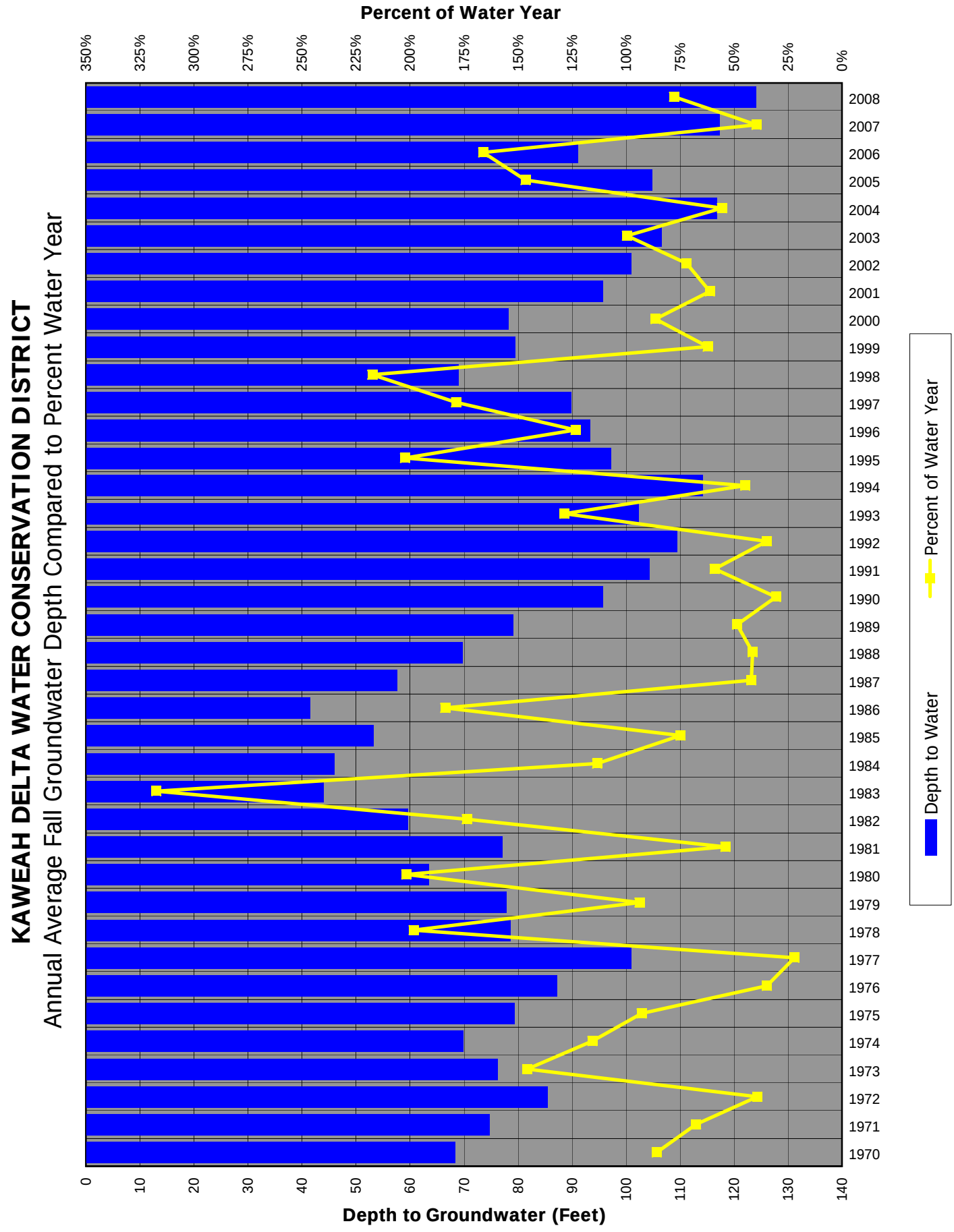
AVERAGE GROUND WATER CHANGES (HYDROLOGIC ZONES)

SPRING 2007 - SPRING 2008

HYDROLOGIC ZONE	NUMBER OF WELLS COMPARED	SPRING 2007 AVERAGE DEPTH TO WATER	SPRING 2008 AVERAGE DEPTH TO WATER	AVERAGE CHANGE IN DEPTH
1	8	29.0	37.4	-8.4
2	13	68.2	83.3	-15.1
3	13	92.1	93.4	-1.3
4	33	76.7	95.8	-19.1
5	81	98.1	116.4	-18.3
6	42	117.5	133.8	-16.4
TOTAL	**190**	**93.3**	**109.5**	**-16.2**

FALL 2007 - FALL 2008

HYDROLOGIC ZONE	NUMBER OF WELLS COMPARED	FALL 2007 AVERAGE DEPTH TO WATER	FALL 2008 AVERAGE DEPTH TO WATER	AVERAGE CHANGE IN DEPTH
1	10	35.2	39.3	-4.2
2	18	90.1	99.7	-9.6
3	13	101.7	108.6	-7.0
4	35	101.1	110.3	-9.2
5	88	116.0	129.8	-13.9
6	42	141.6	152.9	-11.3
TOTAL	**206**	**111.6**	**122.8**	**-11.3**


KAWEAH DELTA WATER CONSERVATION DISTRICT
Annual Average Fall Groundwater Depth Compared to Percent Water Year
Percent of Water Year
350%
325%
300%
275%
250%
225%
200%
175%
150%
125%
100%
75%
50%
25%
0%
2008
2007
2006
2005
2004
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1971
1970
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50
60
70
80
90
100
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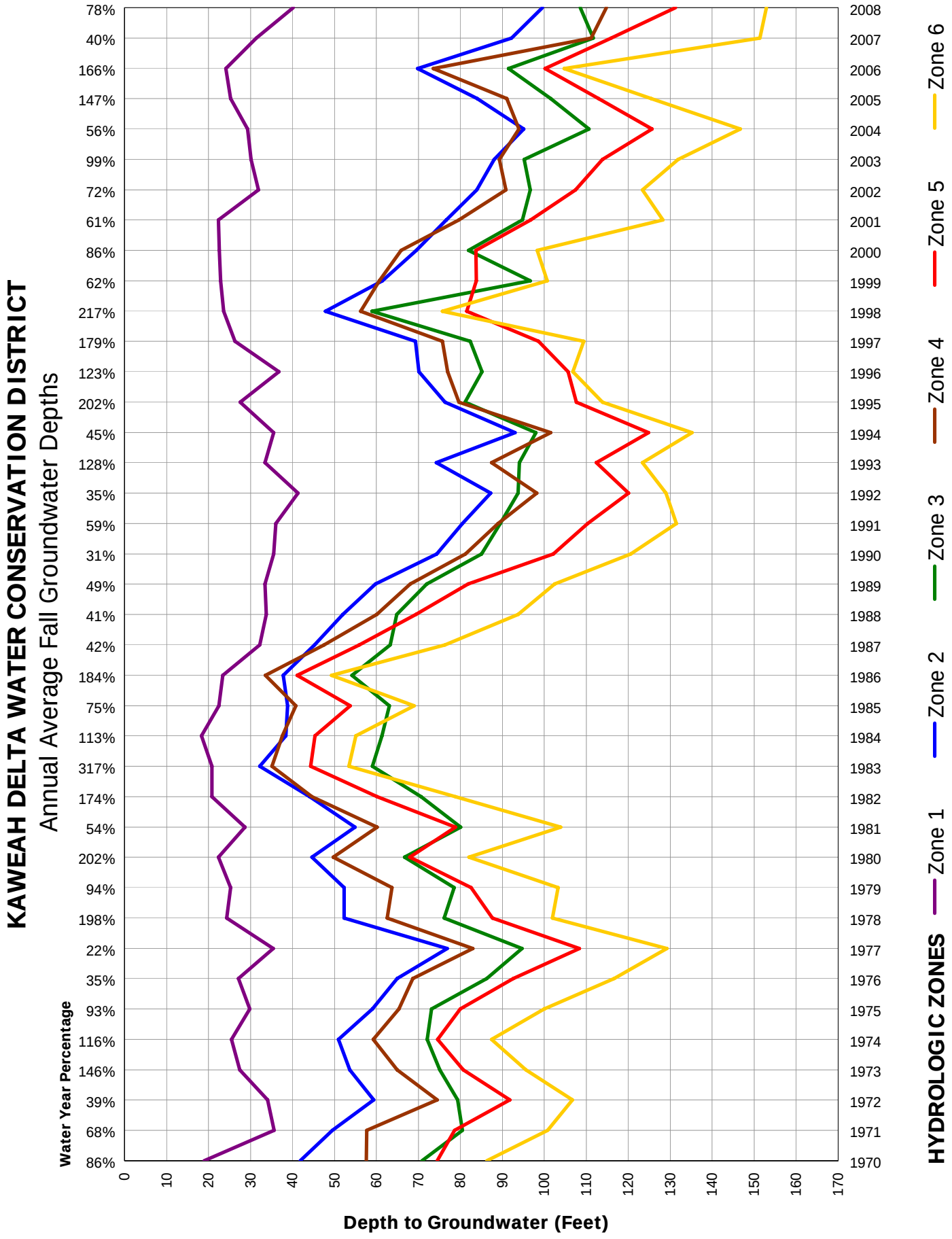
120
130
140
Depth to Groundwater (Feet)
Depth to Water
Percent of Water Year


KAWEAH DELTA WATER CONSERVATION DISTRICT
Annual Average Fall Groundwater Depths
Water Year Percentage
78%
40%
166%
147%
56%
99%
72%
61%
86%
62%
217%
179%
123%
202%
45%
128%
35%
59%
31%
49%
41%
42%
184%
75%
113%
317%
174%
54%
202%
94%
198%
22%
35%
93%
116%
146%
39%
68%
86%
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90
100
110
120
130
140
150
160
170
Depth to Groundwater (Feet)
HYDROLOGIC ZONES
Zone 1
Zone 2
Zone 3
Zone 4
Zone 5
Zone 6

KAWEAH DELTA WATER CONSERVATION DISTRICT
AVERAGE DEPTH TO GROUNDWATER (FALL)
(DATA FROM NEW HYDROLOGIC ZONES)

Year	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	District	% WY
1970	19.0	41.9	70.9	57.6	74.5	86.3	68.4	86%
1971	35.6	49.5	80.5	57.7	78.6	100.8	74.7	68%
1972	34.1	59.4	79.4	74.5	91.8	106.7	85.4	39%
1973	27.5	53.7	75.1	65.0	80.7	95.6	76.2	146%
1974	25.5	51.0	72.1	59.3	74.6	87.4	69.9	116%
1975	29.8	59.0	73.1	65.4	80.0	100.0	79.3	93%
1976	27.1	65.0	86.3	68.7	92.6	116.6	87.2	35%
1977	35.4	76.9	94.7	83.0	108.4	129.2	101.0	22%
1978	24.3	52.3	76.1	62.6	87.6	101.9	78.5	198%
1979	25.3	52.3	78.5	63.7	82.6	103.3	77.9	94%
1980	22.4	44.6	66.7	49.7	68.0	82.0	63.5	202%
1981	28.7	54.9	80.1	60.2	78.8	103.9	77.1	54%
1982	20.8	44.1	70.7	44.7	60.2	78.8	59.6	174%
1983	20.8	32.2	59.1	35.1	44.3	53.5	44.0	317%
1984	18.3	38.4	61.3	37.6	45.4	55.1	45.9	113%
1985	22.5	38.9	63.1	40.8	53.8	69.0	53.2	75%
1986	23.4	37.8	54.2	33.6	41.1	49.3	41.4	184%
1987	32.2	45.3	63.3	47.5	55.9	76.4	57.6	42%
1988	33.8	52.0	64.8	60.1	69.4	93.8	69.7	41%
1989	33.5	59.8	72.0	68.1	81.8	102.5	79.1	49%
1990	35.5	74.4	85.0	81.2	102.1	120.6	95.6	31%
1991	36.0	80.5	89.5	89.0	110.3	131.5	104.3	59%
1992	41.3	87.2	93.8	98.2	120.1	129.0	109.4	35%
1993	33.5	74.3	94.1	87.4	112.4	123.4	102.3	128%
1994	35.5	93.0	98.0	101.5	124.8	135.2	114.2	45%
1995	27.6	76.4	81.1	79.7	107.6	113.8	97.2	202%
1996	36.8	70.1	85.2	77.0	105.7	106.8	93.3	123%
1997	26.3	69.3	82.4	75.7	98.6	109.4	89.8	179%
1998	23.6	47.9	58.9	56.3	81.5	75.7	69.0	217%
1999	22.9	61.4	96.7	60.7	83.8	100.7	79.5	62%
2000	22.6	69.5	81.9	65.9	83.7	98.3	78.2	86%
2001	22.4	76.7	94.8	79.7	96.8	128.3	95.6	61%
2002	31.9	83.9	96.7	90.9	107.4	123.4	100.9	72%
2003	30.1	88.1	95.2	89.3	113.9	131.9	106.6	99%
2004	29.3	95.1	110.6	94.0	125.7	146.7	116.7	56%
2005	25.3	84.0	101.5	91.1	112.9	125.5	104.8	147%
2006	24.1	69.8	91.5	73.6	100.2	104.7	91.1	166%
2007	31.4	92.2	111.7	111.2	115.9	151.4	117.3	40%
2008	40.2	99.6	108.6	114.8	131.3	152.9	124.0	78%

KAWEAH DELTA WATER CONSERVATION DISTRICT

WELLS REMOVED FROM LAST YEAR'S ANNUAL REPORT

AGENCY CODE	WELL NUMBER	HYDROLOGIC ZONE	AGENCY CODE	WELL NUMBER	HYDROLOGIC ZONE
5603	18S23E12B001M	2	5604	19S24E35R001M	5
5129	18S23E16R001M	6	5603	19S25E23D002M	4
5603	18S23E34A002M	3	5604	19S25E31A001M	5
5603	18S24E15R003M	2	5603	19S26E04J001M	4
5603	18S26E01Q003M	1	5129	20S22E07A002M	6
5627	19S21E23J001M	6	5129	20S22E15A001M	6
5129	19S21E24L001M	6	5604	20S23E31N001M	5
5129	19S22E07A001M	6	5604	20S24E04J002M	5
5129	19S22E10A001M	6	5603	20S24E25N001M	4
5129	19S22E27C001M	6	5603	21S23E12C001M	4
5603	19S24E04D001M	3	5603	21S24E09C001M	4
5604	19S24E16P001M	5			

WELLS ADDED FROM LAST YEAR'S ANNUAL REPORT

AGENCY CODE	WELL NUMBER	HYDROLOGIC ZONE	AGENCY CODE	WELL NUMBER	HYDROLOGIC ZONE
5603	17S23E34J001M	2	5603	19S26E03A001M	4
5603	18S26E02D002M	1	5603	20S25E06R002M	5
5603	19S22E08D002M	6	5603	21S22E07J001M	6
5603	19S25E32J001M	4			

KAWEAH DELTA WATER CONSERVATION DISTRICT
GROUNDWATER DATA

WELL IDENTIFICATION			DEPTH TO WATER (FEET)					
			SPRING			FALL		
AGENCY CODE	WELL NUMBER	HYDROLOGIC ZONE	SPRING 2007	SPRING 2008	SPRING CHANGE	FALL 2007	FALL 2008	FALL CHANGE
5603	17S23E27L001M	2	88.5	80.5	8.0	122.0	117.5	4.5
5603	17S23E34J001M	2	70.0	87.0	-17.0	88.0	94.0	-6.0
5603	17S24E20L001M	2	13.5	32.5	-19.0	29.0	33.5	-4.5
5603	17S24E27F001M	2	28.2		N/A	52.0	65.2	-13.2
5603	17S24E34B001M	2	31.5	68.5	-37.0	62.0	67.5	-5.5
5603	17S24E36H003M	2		78.5	N/A	90.0	89.5	0.5
5603	17S25E29E001M	2	115.0	121.0	-6.0	125.0		N/A
5603	17S26E36R001M	1		25.5	N/A	39.0	49.5	-10.5
5603	18S22E32J001M	6			N/A			N/A
5603	18S22E34R001M	6	79.7	99.7	-20.0	88.0		N/A
5603	18S23E02Q001M	2	101.5		N/A	116.0	141.5	-25.5
5603	18S23E14A001M	2		152.0	N/A	169.0	162.0	7.0
5129	18S23E15A001M	2	110.6	103.8	6.8	117.0	120.8	-3.8
5129	18S23E21J001M	6	141.3	118.8	22.5	128.5	160.7	-32.2
5603	18S23E24K001M	2		114.7	N/A	125.0		N/A
5603	18S23E26F001M	3	128.4	125.4	3.0	135.0	158.4	-23.4
5129	18S23E26L001M	3	147.9	118.7	29.2	130.5	129.0	1.5
5129	18S23E27P001M	3	111.9	117.2	-5.3	119.9	130.6	-10.7
5129	18S23E28B001M	6	102.1	103.4	-1.3	114.4	114.1	0.3
5129	18S23E28R001M	6	114.7	111.5	3.2	117.8	123.5	-5.7
5603	18S23E30D001M	6	130.0	187.0	-57.0	197.0	282.0	-85.0
5129	18S23E32B001M	6	167.0		N/A	152.5	177.7	-25.2
5129	18S23E33C001M	6	115.4	109.6	5.8	120.1	121.3	-1.2
5603	18S23E33J001M	6	135.5	121.5	14.0	137.0	147.5	-10.5
5129	18S23E34A001M	3	136.3	119.0	17.3	126.2	133.9	-7.7
5603	18S24E02H001M	2		80.5	N/A	86.0	99.5	-13.5
5603	18S24E04J001M	2	48.5		N/A	87.0		N/A
5603	18S24E06H001M	2	58.0		N/A	95.0	99.0	-4.0
5603	18S24E07H001M	2	58.5	89.5	-31.0	86.0	134.0	-48.0
5603	18S24E10J001M	2	67.5	93.5	-26.0	69.8		N/A
5603	18S24E13H002M	2	70.0	89.5	-19.5	99.0	117.0	-18.0
5603	18S24E17L001M	2	77.0		N/A	93.0		N/A
5603	18S24E31C001M	3		150.5	N/A	188.5		N/A
5603	18S25E04H001M	2	85.0		N/A			N/A
5603	18S25E05E002M	2		107.0	N/A	97.0	104.0	-7.0
5603	18S25E05Q001M	2	83.0	99.0	-16.0	99.0	109.0	-10.0
5603	18S25E12N001M	2	60.0	62.0	-2.0	62.0	94.0	-32.0
5603	18S25E15A002M	2	59.0	77.0	-18.0	69.0	69.0	0.0
5603	18S25E15C001M	2	59.0	79.0	-20.0	84.0	77.0	7.0

KAWEAH DELTA WATER CONSERVATION DISTRICT
GROUNDWATER DATA

WELL IDENTIFICATION			DEPTH TO WATER (FEET)					
			SPRING			FALL		
AGENCY CODE	WELL NUMBER	HYDROLOGIC ZONE	SPRING 2007	SPRING 2008	SPRING CHANGE	FALL 2007	FALL 2008	FALL CHANGE
5603	18S25E16B001M	2			N/A	85.0		N/A
5603	18S25E18A001M	2			N/A			N/A
5603	18S25E19H001M	2	74.0		N/A		99.0	N/A
5603	18S25E23J001M	3	67.0	65.0	2.0	49.0	54.0	-5.0
5603	18S25E33R001M	3	66.5	67.5	-1.0	83.0	102.5	-19.5
5603	18S26E02D002M	1	50.0	55.0	-5.0	58.0	66.0	-8.0
5603	18S26E09H001M	1	11.5		N/A		49.5	N/A
5603	18S26E10J001M	1	20.0	46.0	-26.0			N/A
5603	18S26E16K001M	1	18.0	19.5	-1.5	25.0	28.0	-3.0
5603	18S26E17L001M	1	23.0	28.5	-5.5	29.0	29.5	-0.5
5603	18S26E19B002M	3	36.5	38.5	-2.0	46.0	49.5	-3.5
5603	18S26E24J002M	1	41.0	49.0	-8.0	60.0	62.0	-2.0
5603	18S26E24J003M	1	48.5	58.5	-10.0	57.0	85.5	-28.5
5603	18S26E27B001M	1	19.0	22.0	-3.0	18.0	24.0	-6.0
5603	18S26E30N001M	3	36.5	48.5	-12.0	43.0	49.5	-6.5
5603	18S26E32A001M	4	23.0	30.0	-7.0	25.0		N/A
5603	18S27E05J001M	1	12.5	20.5	-8.0	21.0	16.5	4.5
5603	18S27E07B001M	1			N/A	19.5	20.0	-0.5
5603	18S27E07R002M	1		17.0	N/A	25.0	12.0	13.0
5603	19S21E13A001M	6	134.6	232.6	-98.0	210.0		N/A
5603	19S21E13C003M	6	115.0	47.0	68.0	172.0		N/A
5627	19S21E25J001M	6	90.3	102.5	-12.2	113.0	101.0	12.0
5627	19S21E26B001M	6	177.2	173.5	3.7	185.1	217.5	-32.4
5603	19S21E34D001M	6	166.5	99.5	67.0	100.0		N/A
5627	19S21E36M001M	6	33.8	39.1	-5.3	41.0	44.5	-3.5
5603	19S22E01N002M	6	69.5	90.5	-21.0	105.0	98.5	6.5
5603	19S22E02K001M	6	57.8	75.8	-18.0	83.0	100.8	-17.8
5627	19S22E04B001M	6	96.3	107.9	-11.6	114.0	122.3	-8.3
5129	19S22E04M001M	6	110.3	105.3	5.0	110.2	118.6	-8.4
5603	19S22E08D002M	6	251.0	180.0	71.0	180.0	175.0	5.0
5603	19S22E09J001M	6		101.0	N/A	90.0	99.0	-9.0
5627	19S22E15M001M	6	85.7		N/A	105.8	125.8	-20.0
5603	19S22E16A002M	6			N/A			N/A
5603	19S22E17E001M	6			N/A			N/A
5603	19S22E17L001M	6	102.4		N/A			N/A
5627	19S22E19M001M	6	99.2	125.4	-26.2	105.3	128.8	-23.5
5603	19S22E21C001M	6	136.0		N/A	164.0	162.0	2.0
5603	19S22E22A001M	6			N/A			N/A
5603	19S22E23A001M	6	97.5		N/A	114.0	127.5	-13.5

KAWEAH DELTA WATER CONSERVATION DISTRICT
GROUNDWATER DATA

WELL IDENTIFICATION			DEPTH TO WATER (FEET)					
			SPRING			FALL		
AGENCY CODE	WELL NUMBER	HYDROLOGIC ZONE	SPRING 2007	SPRING 2008	SPRING CHANGE	FALL 2007	FALL 2008	FALL CHANGE
5603	19S22E24B001M	6			N/A	110.0		N/A
5603	19S22E28D001M	6	81.0	108.0	-27.0	117.0	127.0	-10.0
5603	19S22E30D001M	6	64.5	74.5	-10.0	110.0	85.5	24.5
5603	19S22E31B002M	6	97.0	118.0	-21.0	132.0	135.0	-3.0
5627	19S22E32D001M	6		200.3	N/A	208.3	226.8	-18.5
5603	19S22E34L001M	6	109.5	122.5	-13.0	136.0	135.5	0.5
5129	19S22E36E001M	6	91.7	107.4	-15.7	106.9	120.5	-13.6
5603	19S23E02F001M	3	98.5	121.5	-23.0	96.0		N/A
5603	19S23E06H001M	6			N/A	127.0		N/A
5603	19S23E07A002M	6			N/A	128.0		N/A
5129	19S23E08J001M	6	174.2		N/A	121.2	153.3	-32.1
5129	19S23E10C001M	3	85.1	92.3	-7.2	104.3	105.4	-1.1
5129	19S23E10D001M	3	79.1	82.5	-3.4		107.9	N/A
5603	19S23E10Q001M	3	103.4		N/A	128.0	143.4	-15.4
5129	19S23E11C001M	3	103.0	98.9	4.1	102.3	109.5	-7.2
5603	19S23E11C001M	3			N/A	123.0		N/A
5603	19S23E12L001M	3		138.9	N/A	134.4	109.4	25.0
5604	19S23E13A003M	5	94.0	102.0	-8.0	103.0	113.0	-10.0
5604	19S23E19H001M	5	86.0	109.0	-23.0	113.0	118.0	-5.0
5604	19S23E20C001M	5	89.0		N/A	101.0	120.0	-19.0
5603	19S23E21C001M	5	103.4		N/A	117.0	127.4	-10.4
5604	19S23E21P001M	5	80.0		N/A	99.0	114.0	-15.0
5603	19S23E22H001M	5	89.6	105.6	-16.0	105.0	132.6	-27.6
5604	19S23E23D001M	5	78.0	101.0	-23.0	100.0	108.0	-8.0
5604	19S23E24L001M	5	82.0	104.0	-22.0	100.0	118.0	-18.0
5604	19S23E25C001M	5	89.0		N/A	98.0		N/A
5604	19S23E25L002M	5	77.0	115.0	-38.0	108.0		N/A
5604	19S23E26B001M	5	62.0	90.0	-28.0	88.0	102.0	-14.0
5604	19S23E27A001M	5	66.0		N/A	91.0	109.0	-18.0
5604	19S23E27P001M	5	60.0	88.0	-28.0	106.0	108.0	-2.0
5604	19S23E30H002M	5	87.0	101.0	-14.0	108.0	122.0	-14.0
5604	19S23E31R001M	5	87.0	110.0	-23.0	106.0	117.0	-11.0
5604	19S23E32H001M	5	87.0	104.0	-17.0	92.0	115.0	-23.0
5604	19S23E34L001M	5	68.0	101.0	-33.0	95.0		N/A
5604	19S23E35H001M	5	69.0	93.0	-24.0	93.0	110.0	-17.0
5603	19S24E08D002M	5	94.0	107.0	-13.0	108.0	111.0	-3.0
5604	19S24E10G001M	3	101.0	119.0	-18.0	120.0	137.0	-17.0
5604	19S24E13C002M	5	98.0	112.0	-14.0	115.0	126.0	-11.0
5604	19S24E14A001M	5	110.0		N/A	128.0	129.0	-1.0

KAWEAH DELTA WATER CONSERVATION DISTRICT
GROUNDWATER DATA

WELL IDENTIFICATION			DEPTH TO WATER (FEET)					
			SPRING			FALL		
AGENCY CODE	WELL NUMBER	HYDROLOGIC ZONE	SPRING 2007	SPRING 2008	SPRING CHANGE	FALL 2007	FALL 2008	FALL CHANGE
5604	19S24E17A001M	5	115.0	126.0	-11.0	136.0	149.0	-13.0
5604	19S24E17N001M	5	115.0	127.0	-12.0	126.0		N/A
5603	19S24E18J001M	5	130.6	141.6	-11.0		143.6	N/A
5604	19S24E18R001M	5	106.0	135.0	-29.0	143.0	155.0	-12.0
5604	19S24E19L001M	5	106.0	119.0	-13.0	126.0	148.0	-22.0
5604	19S24E20J001M	5	108.0	131.0	-23.0	135.0	155.0	-20.0
5603	19S24E22C001M	5			N/A			N/A
5604	19S24E22C002M	5	89.0	117.0	-28.0	115.0	135.0	-20.0
5604	19S24E22P001M	5	105.0	124.0	-19.0	132.0	147.0	-15.0
5604	19S24E23D001M	5	106.0	130.0	-24.0	133.0	148.0	-15.0
5604	19S24E24A003M	5	100.0	106.0	-6.0	109.0	118.0	-9.0
5604	19S24E25D001M	5	99.0		N/A			N/A
5604	19S24E27H001M	5	107.0	124.0	-17.0	122.0	134.0	-12.0
5604	19S24E27Q001M	5	113.0	129.0	-16.0	136.0	147.0	-11.0
5604	19S24E28H001M	5	109.0	126.0	-17.0	134.0	150.0	-16.0
5604	19S24E29D001M	5	112.0	135.0	-23.0	135.0	149.0	-14.0
5604	19S24E29R001M	5	108.0		N/A	127.0	138.0	-11.0
5604	19S24E30J001M	5	111.0	127.0	-16.0	131.0		N/A
5604	19S24E31E001M	5	120.0	143.0	-23.0	152.0	165.0	-13.0
5603	19S24E31K001M	5	99.7	138.7	-39.0	129.0	156.7	-27.7
5604	19S24E33A002M	5	117.0	131.0	-14.0	136.0	144.0	-8.0
5604	19S24E33H001M	5	120.0	139.0	-19.0	139.0	151.0	-12.0
5604	19S24E36C001M	5			N/A			N/A
5604	19S24E36R001M	5	109.0	122.0	-13.0			N/A
5603	19S25E01P001M	4	40.5	58.0	-17.5	57.0	67.5	-10.5
5603	19S25E02A001M	4	39.0	57.0	-18.0	53.0	73.0	-20.0
5603	19S25E09H001M	4		84.0	N/A	84.0		N/A
5603	19S25E10R001M	4	61.5	79.0	-17.5	77.0	117.5	-40.5
5603	19S25E13A002M	4		59.0	N/A	56.0	61.0	-5.0
5603	19S25E16A002M	4		82.0	N/A	91.0	97.0	-6.0
5604	19S25E19B001M	5	84.0	103.0	-19.0	103.0	111.0	-8.0
5604	19S25E20P001M	5	72.0	96.0	-24.0	98.0	103.0	-5.0
5603	19S25E24M001M	4	59.5	72.5	-13.0	61.0	82.5	-21.5
5603	19S25E27A001M	4	62.0	76.0	-14.0	81.0	108.0	-27.0
5603	19S25E28H001M	4			N/A	78.0	100.0	-22.0
5604	19S25E29B001M	5	62.0	92.0	-30.0	90.0	101.0	-11.0
5604	19S25E30C001M	5	90.0	108.0	-18.0	110.0	125.0	-15.0
5603	19S25E32J001M	4	87.0	108.0	-21.0	105.0	112.0	-7.0
5603	19S25E34A002M	4	62.0	94.0	-32.0	102.0		N/A

KAWEAH DELTA WATER CONSERVATION DISTRICT
GROUNDWATER DATA

WELL IDENTIFICATION			DEPTH TO WATER (FEET)					
			SPRING			FALL		
AGENCY CODE	WELL NUMBER	HYDROLOGIC ZONE	SPRING 2007	SPRING 2008	SPRING CHANGE	FALL 2007	FALL 2008	FALL CHANGE
5603	19S25E35B002M	4	58.5	98.5	-40.0	76.0		N/A
5603	19S26E03A001M	4	71.0	77.0	-6.0	79.0	89.0	-10.0
5603	19S26E05C001M	4	27.0	16.0	11.0	37.0	40.0	-3.0
5603	19S26E05N001M	4	34.8		N/A	61.0	67.8	-6.8
5603	19S26E16J002M	4	81.5	78.5	3.0	83.0		N/A
5603	19S26E17L001M	4	40.5	71.5	-31.0	72.0		N/A
5603	19S26E20A001M	4	64.5	70.5	-6.0	69.0	84.5	-15.5
5603	19S26E21J001M	4			N/A			N/A
5603	19S26E28D001M	4	65.0	69.0	-4.0			N/A
5603	19S26E30D001M	4	61.0	66.0	-5.0	73.0	75.0	-2.0
5603	19S26E33C001M	4	67.0	74.0	-7.0	69.0	118.0	-49.0
5603	19S26E33M001M	4	59.0	73.0	-14.0	60.0	75.0	-15.0
5627	20S21E11D001M	6	167.3	295.0	-127.7			N/A
5627	20S21E11N001M	6	176.9		N/A			N/A
5603	20S21E24F001M	6	152.0	216.0	-64.0	299.5	190.0	109.5
5603	20S21E36P001M	6		297.0	N/A			N/A
5604	20S22E01H001M	6	100.0	121.0	-21.0	115.0	127.0	-12.0
5627	20S22E01Q001M	6	101.9	121.6	-19.7	121.4	134.3	-12.9
5627	20S22E02C001M	6	99.3	127.0	-27.7	119.2	146.0	-26.8
5603	20S22E03C002M	6	105.0	117.0	-12.0	130.0	139.0	-9.0
5627	20S22E03P001M	6	98.1	115.7	-17.6	115.2	128.9	-13.7
5603	20S22E04C001M	6	95.0	111.0	-16.0	130.0		N/A
5627	20S22E04D001M	6	84.2	94.7	-10.5	100.9	107.8	-6.9
5627	20S22E05L001M	6	136.7	193.3	-56.6	231.9	257.9	-26.0
5627	20S22E06C001M	6	149.3	148.9	0.4	155.0	186.9	-31.9
5627	20S22E06H001M	6	135.0	188.0	-53.0	214.5	249.8	-35.3
5603	20S22E07A003M	6		210.0	N/A	240.0		N/A
5627	20S22E07A004M	6	127.5	180.3	-52.8	238.1	278.0	-39.9
5603	20S22E08A002M	6	157.0	181.0	-24.0	197.0	207.0	-10.0
5627	20S22E08J001M	6		121.1	N/A		154.2	N/A
5627	20S22E09H001M	6	148.0	184.5	-36.5	171.0	196.5	-25.5
5603	20S22E13C002M	6	217.5		N/A	254.0		N/A
5603	20S22E14C001M	6	222.5		N/A	250.0		N/A
5627	20S22E20A002M	6	51.9	71.9	-20.0	75.5	83.7	-8.2
5603	20S22E23M001M	6	273.5		N/A	225.0		N/A
5603	20S22E24R001M	6	198.5		N/A	238.0		N/A
5604	20S22E25R001M	6	111.0	137.0	-26.0		152.0	N/A
5603	20S22E27A001M	6			N/A			N/A
5603	20S22E33F001M	6			N/A			N/A

KAWEAH DELTA WATER CONSERVATION DISTRICT
GROUNDWATER DATA

WELL IDENTIFICATION			DEPTH TO WATER (FEET)					
			SPRING			FALL		
AGENCY CODE	WELL NUMBER	HYDROLOGIC ZONE	SPRING 2007	SPRING 2008	SPRING CHANGE	FALL 2007	FALL 2008	FALL CHANGE
5603	20S22E35L001M	6			N/A			N/A
5603	20S22E36A001M	5	99.0		N/A			N/A
5604	20S23E02H001M	5	80.0	99.0	-19.0	96.0	104.0	-8.0
5604	20S23E03L001M	5	84.0	105.0	-21.0	96.0	120.0	-24.0
5604	20S23E04F001M	5	93.0		N/A	111.0	125.0	-14.0
5129	20S23E05J001M	5	96.9	111.6	-14.7	115.3	128.6	-13.3
5604	20S23E07H003M	5	110.0	124.0	-14.0	136.0	142.0	-6.0
5129	20S23E08G001M	5	104.0	120.2	-16.2	122.0	139.9	-17.9
5604	20S23E08H001M	5	108.0	122.0	-14.0	126.0		N/A
5604	20S23E09J002M	5	90.0		N/A	108.0	125.0	-17.0
5603	20S23E11C001M	5			N/A			N/A
5604	20S23E11L001M	5	96.0		N/A	119.0	132.0	-13.0
5604	20S23E12A001M	5	95.0	108.0	-13.0	117.0	120.0	-3.0
5604	20S23E13E002M	5	100.0	120.0	-20.0	113.0	127.0	-14.0
5604	20S23E15A001M	5	94.0	113.0	-19.0	119.0	131.0	-12.0
5604	20S23E16J001M	5	96.0		N/A	118.0	135.0	-17.0
5604	20S23E17C001M	5	119.0	132.0	-13.0	139.0	152.0	-13.0
5604	20S23E18R001M	5	126.0	138.0	-12.0			N/A
5604	20S23E19J001M	5	130.0	137.0	-7.0	149.0	158.0	-9.0
5604	20S23E21B001M	5	116.0	125.0	-9.0	125.0	140.0	-15.0
5604	20S23E24L001M	5	96.0		N/A	121.0	154.0	-33.0
5604	20S23E25J002M	4	116.0		N/A	105.0	151.0	-46.0
5604	20S23E26C001M	5	123.0	135.0	-12.0	113.0	162.0	-49.0
5604	20S23E26R001M	5	92.0	112.0	-20.0	114.0	124.0	-10.0
5604	20S23E27D001M	5	100.0	119.0	-19.0	115.0	132.0	-17.0
5604	20S23E27R001M	5	94.0	123.0	-29.0	122.0	123.0	-1.0
5604	20S23E29J002M	5	108.0	125.0	-17.0	126.0	135.0	-9.0
5604	20S23E30R001M	5	137.0		N/A	136.0	154.0	-18.0
5604	20S24E04E001M	5	113.0	135.0	-22.0	134.0	136.0	-2.0
5604	20S24E06A001M	5	114.0	136.0	-22.0	138.0	147.0	-9.0
5604	20S24E07G001M	5	103.0	119.0	-16.0	114.0	126.0	-12.0
5604	20S24E09M001M	5	101.0	116.0	-15.0	114.0	121.0	-7.0
5604	20S24E14R001M	5	102.0	113.0	-11.0	119.0	128.0	-9.0
5604	20S24E15P001M	5	76.0	92.0	-16.0	92.0	100.0	-8.0
5604	20S24E16H001M	5	115.0		N/A	138.0	150.0	-12.0
5604	20S24E17A002M	5	93.0	110.0	-17.0	106.0	113.0	-7.0
5604	20S24E17P001M	5	95.0	119.0	-24.0	90.0	97.0	-7.0
5604	20S24E18F001M	5	111.0	130.0	-19.0	132.0		N/A
5604	20S24E20M002M	5	81.0	94.0	-13.0	99.0	105.0	-6.0

KAWEAH DELTA WATER CONSERVATION DISTRICT
GROUNDWATER DATA

WELL IDENTIFICATION			DEPTH TO WATER (FEET)					
			SPRING			FALL		
AGENCY CODE	WELL NUMBER	HYDROLOGIC ZONE	SPRING 2007	SPRING 2008	SPRING CHANGE	FALL 2007	FALL 2008	FALL CHANGE
5603	20S24E24H001M	4	141.5		N/A	178.5		N/A
5604	20S24E27C001M	5	63.0	66.0	-3.0	81.0	77.0	4.0
5604	20S24E28L001M	5	56.0	85.0	-29.0	84.0	88.0	-4.0
5604	20S24E29B001M	5	66.0	76.0	-10.0	79.0	83.0	-4.0
5604	20S24E30J002M	4	90.0	102.0	-12.0	102.0	112.0	-10.0
5604	20S24E31R001M	4	85.0	93.0	-8.0	94.0	100.0	-6.0
5604	20S24E33C001M	5		81.0	N/A	68.0	73.0	-5.0
5603	20S24E34C001M	4	53.5	70.5	-17.0	108.0	83.5	24.5
5603	20S25E01A001M	4	46.0	88.0	-42.0	96.0	83.0	13.0
5603	20S25E02A001M	4		76.5	N/A			N/A
5603	20S25E03R001M	4	64.0	109.0	-45.0	97.0	105.0	-8.0
5604	20S25E06C001M	5	101.0	114.0	-13.0	119.0	137.0	-18.0
5603	20S25E06R002M	5	100.0	116.0	-16.0	123.0	154.0	-31.0
5603	20S25E12A001M	4	53.5		N/A	65.0	96.5	-31.5
5603	20S25E14F001M	4	98.5	94.5	4.0	111.0	120.5	-9.5
5603	20S25E14F002M	4	104.5	97.5	7.0	110.0	85.5	24.5
5603	20S25E14F004M	4		87.0	N/A	118.0	166.0	-48.0
5603	20S25E16J002M	4		140.0	N/A	196.0		N/A
5603	20S25E17A002M	4			N/A			N/A
5604	20S25E18M001M	5	116.0	119.0	-3.0	134.0	153.0	-19.0
5603	20S25E19R001M	4		133.5	N/A	194.5		N/A
5603	20S25E23H001M	4			N/A	102.0		N/A
5603	20S25E24R001M	4	94.5	124.5	-30.0	132.0		N/A
5603	20S25E28H002M	4		117.0	N/A	135.0		N/A
5603	20S26E07R002M	4		100.5	N/A	109.0	221.0	-112.0
5603	21S22E07J001M	6	250.0	255.0	-5.0	254.0	255.0	-1.0
5603	21S23E02A001M	4	119.5	172.5	-53.0	161.5	197.5	-36.0
5604	21S23E02C001M	4		113.0	N/A	117.0	127.0	-10.0
5603	21S23E03D001M	5	117.8	142.8	-25.0	138.0	256.8	-118.8
5604	21S23E03N001M	5		124.0	N/A	110.0	120.0	-10.0
5604	21S23E04A001M	5	117.0		N/A	129.0	136.0	-7.0
5604	21S23E05A002M	5	102.0	121.0	-19.0	119.0	136.0	-17.0
5604	21S23E05E002M	5	113.0		N/A	117.0	121.0	-4.0
5604	21S23E05R001M	5	98.0	116.0	-18.0	119.0	136.0	-17.0
5604	21S23E07H001M	5	134.0	131.0	3.0	156.0	149.0	7.0
5603	21S23E07J001M	5		296.5	N/A		210.0	N/A
5604	21S23E08F002M	5	109.0	131.0	-22.0	122.0	137.0	-15.0
5604	21S23E08R001M	5	94.0	112.0	-18.0	114.0	132.0	-18.0
5604	21S23E10J002M	5	88.0	112.0	-24.0	104.0	118.0	-14.0

KAWEAH DELTA WATER CONSERVATION DISTRICT
GROUNDWATER DATA

WELL IDENTIFICATION			DEPTH TO WATER (FEET)					
			SPRING			FALL		
AGENCY CODE	WELL NUMBER	HYDROLOGIC ZONE	SPRING 2007	SPRING 2008	SPRING CHANGE	FALL 2007	FALL 2008	FALL CHANGE
5603	21S23E11D001M	4	157.5	264.0	-106.5		271.5	N/A
5603	21S23E13A002M	4	143.0	157.5	-14.5	200.0		N/A
5604	21S23E14C001M	4	118.0	128.0	-10.0	129.0	140.0	-11.0
5604	21S23E21C002M	5	98.0		N/A			N/A
5604	21S23E21C003M	5	105.0	141.0	-36.0		176.0	N/A
5604	21S23E22H001M	5	88.0		N/A			N/A
5603	21S23E22J001M	6	90.0		N/A	177.0		N/A
5603	21S24E01L001M	4			N/A			N/A
5603	21S24E03L001M	4	98.4	124.4	-26.0			N/A
5604	21S24E04F001M	4	123.0		N/A	155.0	192.0	-37.0
5603	21S24E05H002M	4	117.2	124.2	-7.0	210.0	127.2	82.8
5603	21S24E07B001M	4		196.0	N/A	168.0	138.0	30.0
5603	21S24E08A001M	4	113.4	144.4	-31.0	185.0	106.4	78.6
5603	21S24E18A001M	4	116.0		N/A	190.0	141.0	49.0

KAWEAH DELTA WATER CONSERVATION DISTRICT
GROUNDWATER MEASUREMENTS

AGENCY CODE	WELL NUMBER	M.P. above G.S.	SPRING 2008			FALL 2008		
			at M.P.	at W.S.	DEPTH	at M.P.	at W.S.	DEPTH
5603	17S23E27L001M	0.5	135	54	80.5	188	70	117.5
5603	17S23E34J001M	0	87	0	87	120	26	94
5603	17S24E20L001M	1.5	52	18	32.5	50	15	33.5
5603	17S24E27F001M	1.8				69	2	65.2
5603	17S24E34B001M	0.5	80	11	68.5	100	32	67.5
5603	17S24E36H003M	1.5	120	40	78.5	135	44	89.5
5603	17S25E29E001M	0	130	9	121			
5603	17S26E36R001M	0.5	50	24	25.5	60	10	49.5
5603	18S22E32J001M	0.8						
5603	18S22E34R001M	0.3	105	5	99.7			
5603	18S23E02Q001M	2.5				160	16	141.5
5603	18S23E14A001M	1	160	7	152	264	101	162
5603	18S23E24K001M	0.3	175	60	114.7			
5603	18S23E26F001M	0.6	136	10	125.4	164	5	158.4
5603	18S23E30D001M	0	187	0	187	290	8	282
5603	18S23E33J001M	0.5	150	28	121.5	170	22	147.5
5603	18S24E02H001M	0.5	100	19	80.5	118	18	99.5
5603	18S24E04J001M	0.5						
5603	18S24E06H001M	1				136	36	99
5603	18S24E07H001M	0.5	100	10	89.5	135	0.5	134
5603	18S24E10J001M	2.5	100	4	93.5			
5603	18S24E13H002M	1	110	19.5	89.5	130	12	117
5603	18S24E13N001M	0	92	0	92	114	8	106
5603	18S24E17L001M	2						
5603	18S24E25D001M	0	100	0	100			
5603	18S24E31C001M	1.5	170	18	150.5			
5603	18S25E04H001M	1						
5603	18S25E05E002M	1	120	12	107	129	24	104
5603	18S25E05Q001M	2	116	15	99	115	4	109
5603	18S25E12N001M	0	62	0	62	110	16	94
5603	18S25E15A002M	1	82	4	77	120	50	69
5603	18S25E15C001M	1	115	35	79	120	42	77
5603	18S25E16B001M	1						
5603	18S25E18A001M	0						
5603	18S25E19H001M	1				136	36	99
5603	18S25E23J001M	0	85	20	65	130	76	54
5603	18S25E28R001M	0	64	0	64	125	53	72
5603	18S25E30Q001M	0	97	0	97	120	15	105
5603	18S25E33R001M	0.5	69	1	67.5	147	44	102.5
5603	18S26E02D002M	0	55	0	55	100	34	66

KAWEAH DELTA WATER CONSERVATION DISTRICT
GROUNDWATER MEASUREMENTS

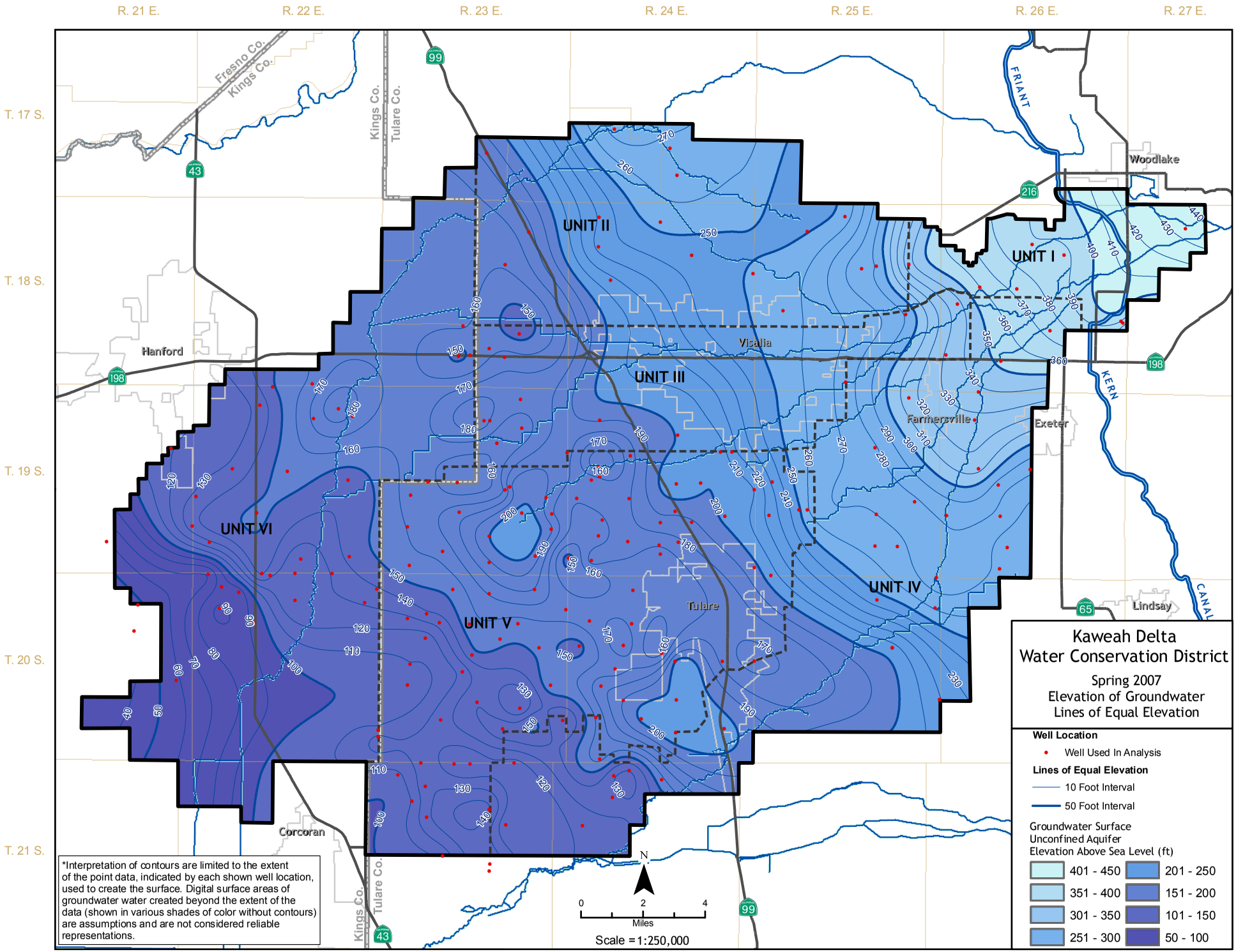
AGENCY CODE	WELL NUMBER	M.P. above G.S.	SPRING 2008			FALL 2008		
			at M.P.	at W.S.	DEPTH	at M.P.	at W.S.	DEPTH
5603	18S26E09H001M	0.5				53	3	49.5
5603	18S26E10J001M	2	50	2	46			
5603	18S26E16K001M	2	35	13.5	19.5	74	44	28
5603	18S26E17L001M	1	40	10.5	28.5	50	19.5	29.5
5603	18S26E19B002M	0.5	60	21	38.5	62	12	49.5
5603	18S26E24J002M	1	72	22	49	90	27	62
5603	18S26E24J003M	0.5	60	1	58.5	98	12	85.5
5603	18S26E27B001M	0	22	0	22	29	5	24
5603	18S26E30N001M	0.5	65	16	48.5	62	12	49.5
5603	18S26E32A001M	0	65	35	30			
5603	18S27E05J001M	1.5	30	8	20.5	19	1	16.5
5603	18S27E07B001M	0				25	5	20
5603	18S27E07R002M	6	29	6	17	30	12	12
5603	19S21E13A001M	0.4	258	25	232.6			
5603	19S21E13C003M	1	123	75	47			
5603	19S21E34D001M	0.5	108	8	99.5			
5603	19S22E01N002M	2.5	108	15	90.5	110	9	98.5
5603	19S22E02K001M	0.2	130	54	75.8	115	14	100.8
5603	19S22E08D002M	0	180	0	180	201	26	175
5603	19S22E09J001M	3	112	8	101	160	58	99
5603	19S22E16A002M	0						
5603	19S22E17E001M	0.4						
5603	19S22E17L001M	0.6						
5603	19S22E21C001M	0				230	68	162
5603	19S22E22A001M	2						
5603	19S22E23A001M	0.5				147	19	127.5
5603	19S22E24B001M	0.2						
5603	19S22E28D001M	2	140	30	108	249	120	127
5603	19S22E30D001M	1.5	82	6	74.5	113	26	85.5
5603	19S22E31B002M	1	125	6	118	155	19	135
5603	19S22E34L001M	1.5	135	11	122.5	150	13	135.5
5603	19S23E02F001M	0.5	130	8	121.5			
5603	19S23E06H001M	1						
5603	19S23E07A002M	0.5						
5603	19S23E10Q001M	0.6				148	4	143.4
5603	19S23E11C001M	0.5						
5603	19S23E12L001M	0.6	140	0.5	138.9	166	56	109.4
5603	19S23E21C001M	0.6				135	7	127.4
5603	19S23E22H001M	0.4	123	17	105.6	140	7	132.6
5603	19S24E08D002M	0	107	0	107	129	18	111

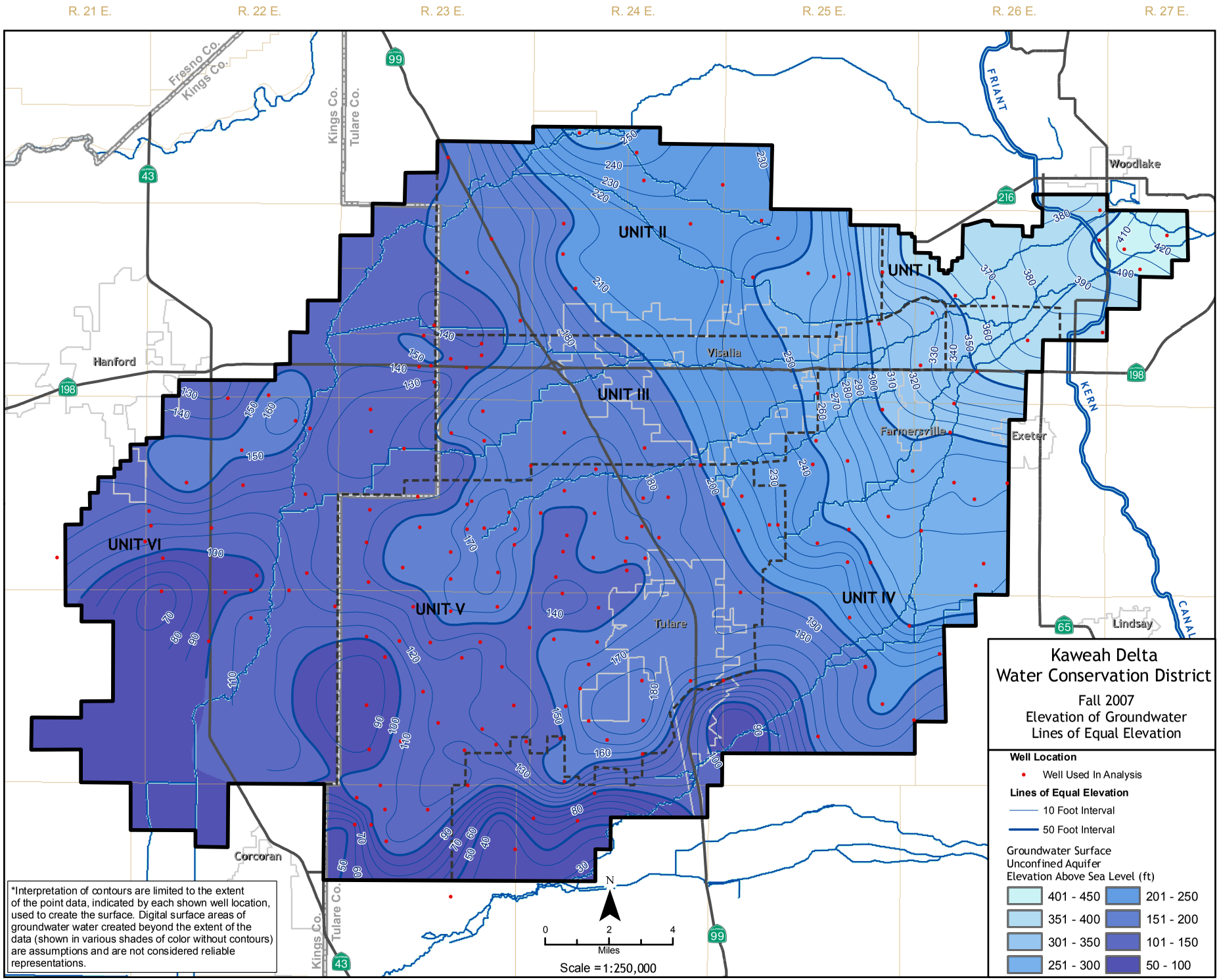
KAWEAH DELTA WATER CONSERVATION DISTRICT
GROUNDWATER MEASUREMENTS

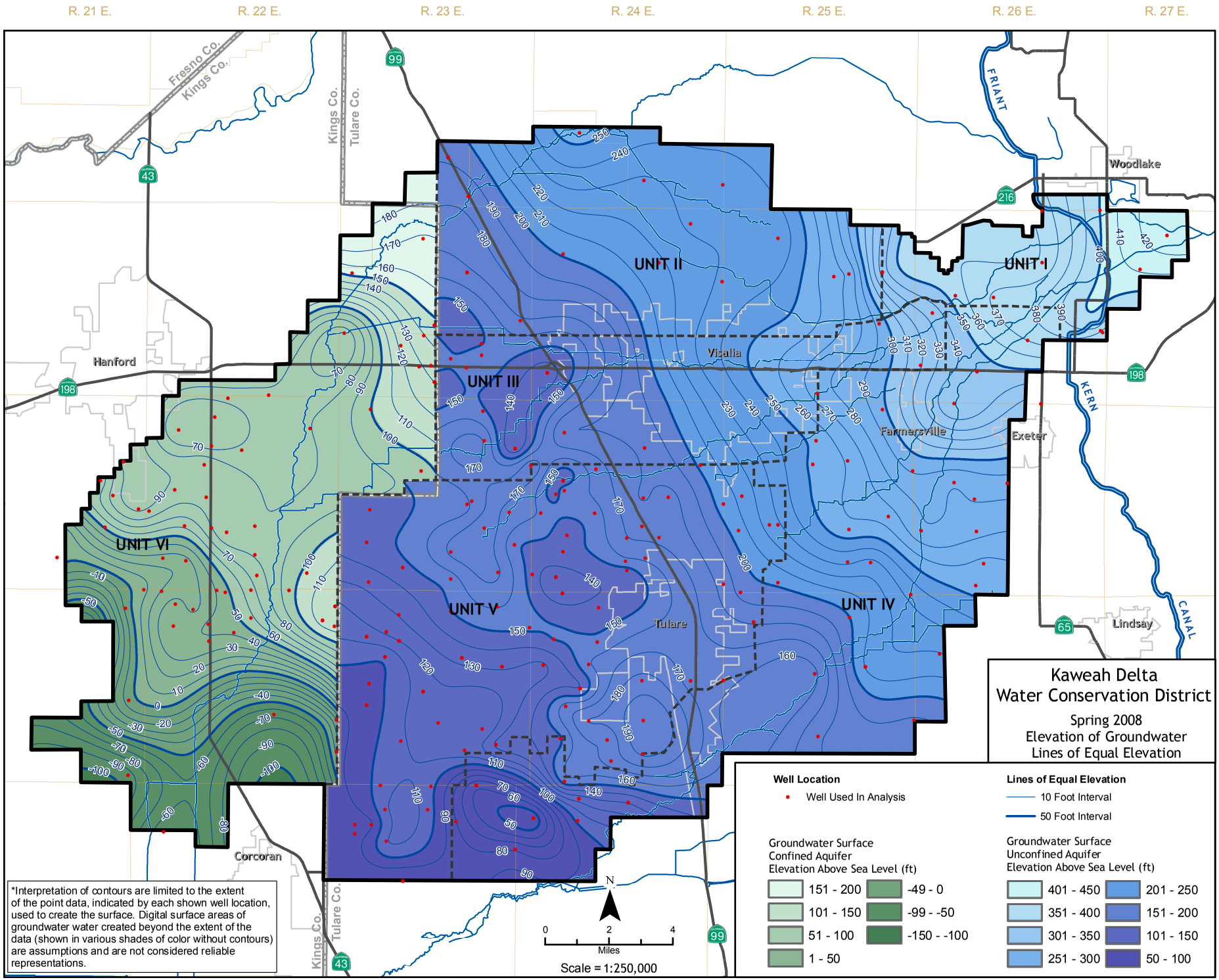
AGENCY CODE	WELL NUMBER	M.P. above G.S.	SPRING 2008			FALL 2008		
			at M.P.	at W.S.	DEPTH	at M.P.	at W.S.	DEPTH
5603	19S24E18J001M	0.4	152	10	141.6	164	20	143.6
5603	19S24E22C001M	0.4						
5603	19S24E31K001M	0.3	150	11	138.7	158	1	156.7
5603	19S25E01P001M	0.5	60	1.5	58	81	13	67.5
5603	19S25E02A001M	1	60	2	57	75	1	73
5603	19S25E06A001M	0	94	0	94	120	15	105
5603	19S25E09H001M	1	89	4	84			
5603	19S25E10R001M	0.5	85	5.5	79	125	7	117.5
5603	19S25E13A002M	2	70	9	59	81	18	61
5603	19S25E16A002M	1	100	17	82	120	22	97
5603	19S25E24M001M	0.5	77	4	72.5	91	8	82.5
5603	19S25E27A001M	2	90	12	76	115	5	108
5603	19S25E28H001M	0				121	21	100
5603	19S25E32J001M	0	108	0	108	120	8	112
5603	19S25E34A002M	1	102	7	94			
5603	19S25E35B002M	1.5	110	10	98.5			
5603	19S26E03A001M	0	77	0	77	100	11	89
5603	19S26E05C001M	0	52	36	16	60	20	40
5603	19S26E05N001M	1.2				102	33	67.8
5603	19S26E16J002M	0.5	125	46	78.5			
5603	19S26E17L001M	0.5	73	1	71.5			
5603	19S26E20A001M	0.5	103	32	70.5	100	15	84.5
5603	19S26E21J001M	1						
5603	19S26E28D001M	1	100	30	69			
5603	19S26E30D001M	2	90	22	66	90	13	75
5603	19S26E33C001M	1	83	8	74	125	6	118
5603	19S26E33M001M	1	135	61	73	100	24	75
5603	20S21E24F001M	0	216	0	216	230	40	190
5603	20S21E36P001M	0	300	3	297			
5603	20S22E03C002M	0	135	18	117	160	21	139
5603	20S22E04C001M	0	118	7	111			
5603	20S22E07A003M	1	214	3	210			
5603	20S22E08A002M	1	185	3	181	214	6	207
5603	20S22E13C002M	0.5						
5603	20S22E14C001M	0.5						
5603	20S22E23M001M	0.5						
5603	20S22E24R001M	0.5						
5603	20S22E27A001M	0.5						
5603	20S22E33F001M	1						
5603	20S22E35L001M	0.5						

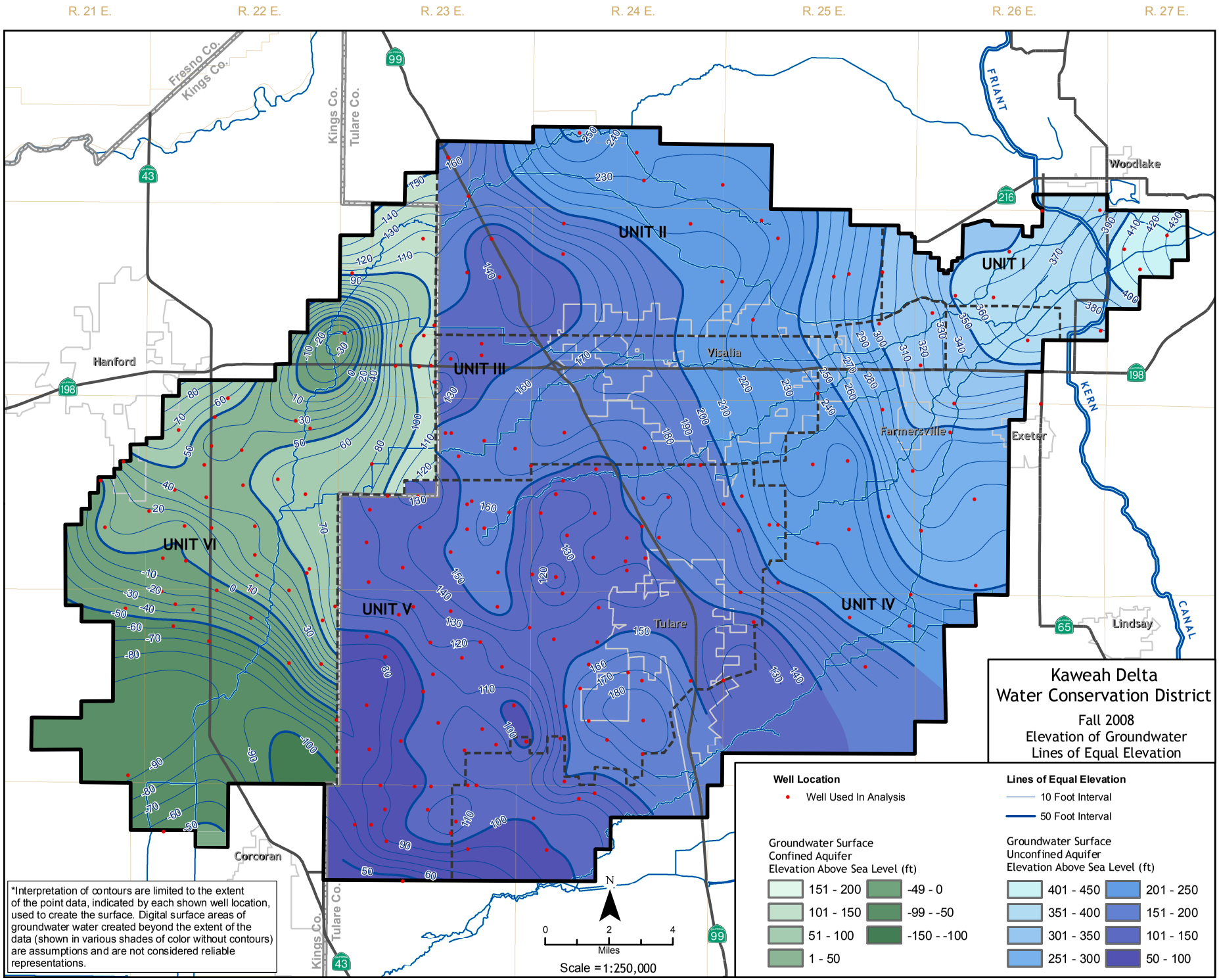
KAWEAH DELTA WATER CONSERVATION DISTRICT
GROUNDWATER MEASUREMENTS

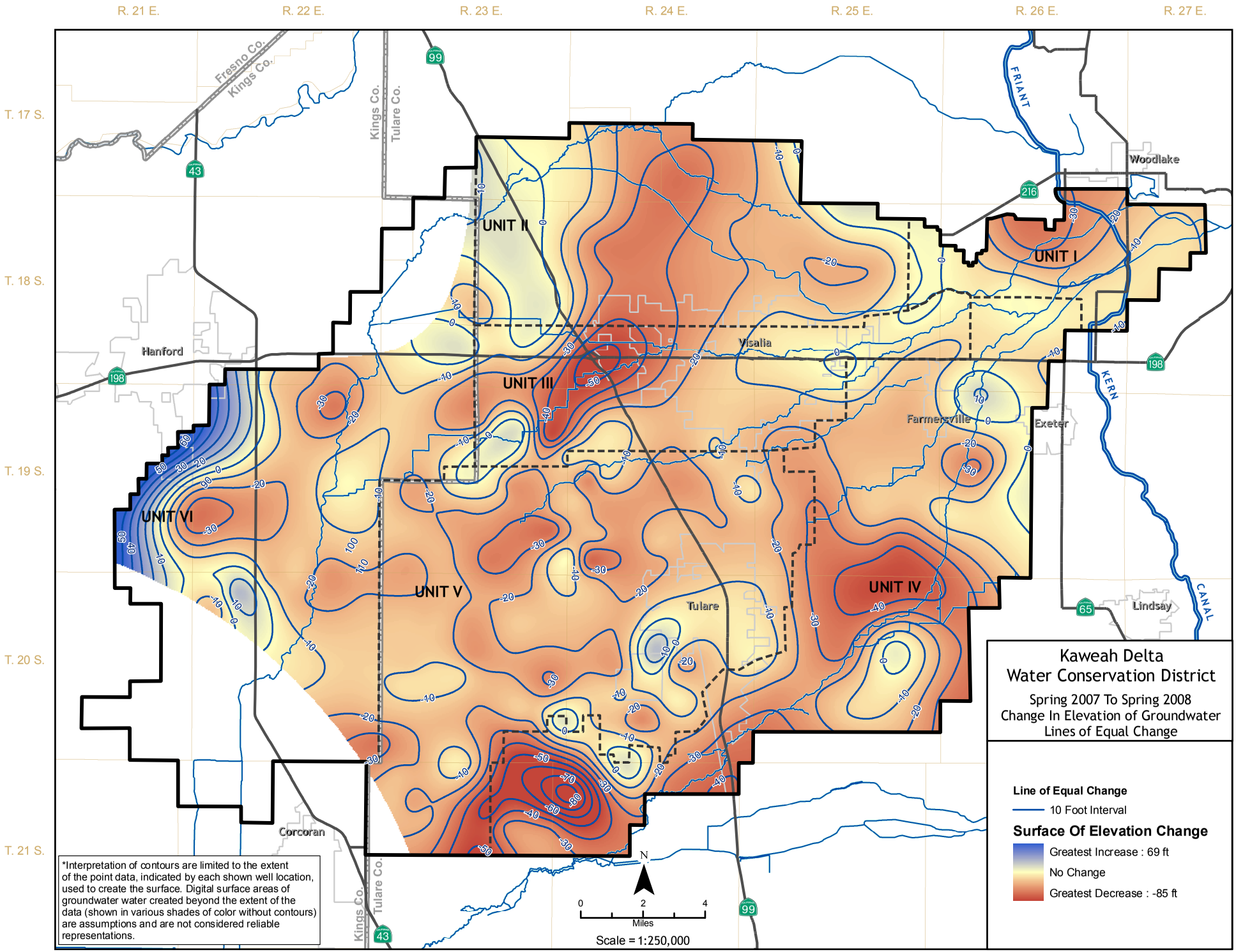
AGENCY CODE	WELL NUMBER	M.P. above G.S.	SPRING 2008			FALL 2008		
			at M.P.	at W.S.	DEPTH	at M.P.	at W.S.	DEPTH
5603	20S22E36A001M	1						
5603	20S23E11C001M	0.4						
5603	20S24E24H001M	0.5						
5603	20S24E34C001M	0.5	74	3	70.5	132	48	83.5
5603	20S25E01A001M	1	100	11	88	125	41	83
5603	20S25E02A001M	0.5	110	33	76.5			
5603	20S25E03R001M	1	115	5	109	130	24	105
5603	20S25E06R002M	0	116	0	116	174	20	154
5603	20S25E12A001M	0.5				148	51	96.5
5603	20S25E14F001M	0.5	115	20	94.5	219	98	120.5
5603	20S25E14F002M	0.5	145	47	97.5	147	61	85.5
5603	20S25E14F004M	1	120	32	87	200	33	166
5603	20S25E16J002M	1	145	4	140			
5603	20S25E17A002M	2						
5603	20S25E19R001M	1.5	143	8	133.5			
5603	20S25E23H001M	0.5						
5603	20S25E24R001M	0.5	137	12	124.5			
5603	20S25E28H002M	2	160	41	117			
5603	20S26E07R002M	1	102	0.5	100.5	230	8	221
5603	21S22E07J001M	0	255	0	255	300	45	255
5603	21S23E02A001M	0.5	180	7	172.5	202	4	197.5
5603	21S23E03D001M	0.2	145	2	142.8	260	3	256.8
5603	21S23E07J001M	0	300	3.5	296.5	290	80	210
5603	21S23E11D001M	0.5	265	0.5	264	295	23	271.5
5603	21S23E13A002M	1	160	1.5	157.5			
5603	21S23E22J001M	1						
5603	21S24E01L001M	0.5						
5603	21S24E03L001M	0.6	200	75	124.4			
5603	21S24E05H002M	0.8	250	125	124.2	296	168	127.2
5603	21S24E07B001M	2	200	2	196	145	5	138
5603	21S24E08A001M	0.6	160	15	144.4	220	113	106.4
5603	21S24E18A001M	0				165	24	141


R. 21 E.
R. 22 E.
R. 23 E.
R. 24 E.
R. 25 E.
R. 26 E.
R. 27 E.
T. 17 S.
T. 18 S.
T. 19 S.
T. 20 S.
T. 21 S.
Fresno Co.
Kings Co.
Kings Co.
Tulare Co.
FRIANT
KERN
CANAL
Woodlake
Hanford
Visalia
Farmersville
Exeter
Lindsay
Tulare
Corcoran
UNIT I
UNIT II
UNIT III
UNIT IV
UNIT V
UNIT VI
99
43
216
198
65
*Interpretation of contours are limited to the extent of the point data, indicated by each shown well location, used to create the surface. Digital surface areas of groundwater water created beyond the extent of the data (shown in various shades of color without contours) are assumptions and are not considered reliable representations.
N
0
2
4
Miles
Scale = 1:250,000
Kaweah Delta
Water Conservation District
Spring 2007
Elevation of Groundwater
Lines of Equal Elevation
Well Location
Well Used In Analysis
Lines of Equal Elevation
10 Foot Interval
50 Foot Interval
Groundwater Surface
Unconfined Aquifer
Elevation Above Sea Level (ft)
401 - 450
351 - 400
301 - 350
251 - 300
201 - 250
151 - 200
101 - 150
50 - 100


R. 21 E.
R. 22 E.
R. 23 E.
R. 24 E.
R. 25 E.
R. 26 E.
R. 27 E.
T. 17 S.
T. 18 S.
T. 19 S.
T. 20 S.
T. 21 S.
Fresno Co.
Kings Co.
Tulare Co.
UNIT I
UNIT II
UNIT III
UNIT IV
UNIT V
UNIT VI
Hanford
Visalia
Farmersville
Exeter
Woodlake
Lindsay
Tulare
Corcoran
FRIANT
KERN
CANAL
*Interpretation of contours are limited to the extent of the point data, indicated by each shown well location, used to create the surface. Digital surface areas of groundwater water created beyond the extent of the data (shown in various shades of color without contours) are assumptions and are not considered reliable representations.
N
0 2 4
Miles
Scale = 1:250,000
Kaweah Delta
Water Conservation District
Fall 2007
Elevation of Groundwater
Lines of Equal Elevation
Well Location
Well Used In Analysis
Lines of Equal Elevation
10 Foot Interval
50 Foot Interval
Groundwater Surface
Unconfined Aquifer
Elevation Above Sea Level (ft)
401 - 450
351 - 400
301 - 350
251 - 300
201 - 250
151 - 200
101 - 150
50 - 100


R. 21 E.
R. 22 E.
R. 23 E.
R. 24 E.
R. 25 E.
R. 26 E.
R. 27 E.
T. 17 S.
T. 18 S.
T. 19 S.
T. 20 S.
T. 21 S.
Fresno Co.
Kings Co.
Tulare Co.
UNIT I
UNIT II
UNIT III
UNIT IV
UNIT V
UNIT VI
Hanford
Visalia
Tulare
Farmersville
Exeter
Woodlake
Lindsay
Corcoran
FRIANT
KERN
CANAL
99
43
198
216
65
*Interpretation of contours are limited to the extent of the point data, indicated by each shown well location, used to create the surface. Digital surface areas of groundwater water created beyond the extent of the data (shown in various shades of color without contours) are assumptions and are not considered reliable representations.
N
0 2 4
Miles
Scale = 1:250,000
Kaweah Delta
Water Conservation District
Spring 2008
Elevation of Groundwater
Lines of Equal Elevation
Well Location
Well Used In Analysis
Lines of Equal Elevation
10 Foot Interval
50 Foot Interval
Groundwater Surface
Confined Aquifer
Elevation Above Sea Level (ft)
151 - 200
101 - 150
51 - 100
1 - 50
-49 - 0
-99 - -50
-150 - -100
Groundwater Surface
Unconfined Aquifer
Elevation Above Sea Level (ft)
401 - 450
351 - 400
301 - 350
251 - 300
201 - 250
151 - 200
101 - 150
50 - 100


R. 21 E.
R. 22 E.
R. 23 E.
R. 24 E.
R. 25 E.
R. 26 E.
R. 27 E.
T. 17 S.
T. 18 S.
T. 19 S.
T. 20 S.
T. 21 S.
Fresno Co.
Kings Co.
Tulare Co.
UNIT I
UNIT II
UNIT III
UNIT IV
UNIT V
UNIT VI
Hanford
Visalia
Woodlake
Farmersville
Exeter
Lindsay
Tulare
Corcoran
FRIANT
KERN
CANAL
99
43
198
216
65
*Interpretation of contours are limited to the extent of the point data, indicated by each shown well location, used to create the surface. Digital surface areas of groundwater water created beyond the extent of the data (shown in various shades of color without contours) are assumptions and are not considered reliable representations.
N
0 2 4
Miles
Scale = 1:250,000
Kaweah Delta
Water Conservation District
Fall 2008
Elevation of Groundwater
Lines of Equal Elevation
Well Location
Well Used In Analysis
Lines of Equal Elevation
10 Foot Interval
50 Foot Interval
Groundwater Surface
Confined Aquifer
Elevation Above Sea Level (ft)
151 - 200
101 - 150
51 - 100
1 - 50
-49 - 0
-99 - -50
-150 - -100
Groundwater Surface
Unconfined Aquifer
Elevation Above Sea Level (ft)
401 - 450
351 - 400
301 - 350
251 - 300
201 - 250
151 - 200
101 - 150
50 - 100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R. 23 E.
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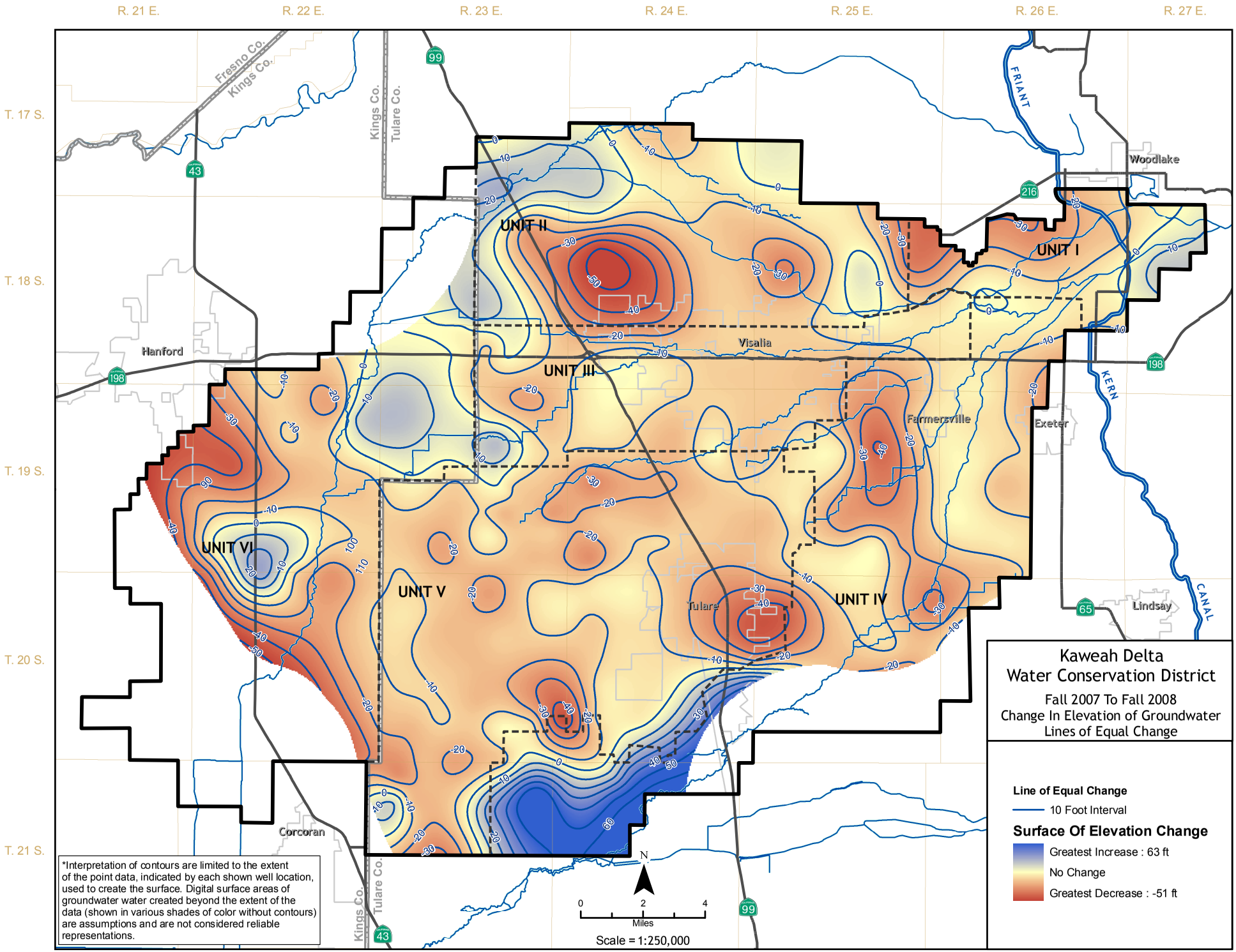
R. 25 E.
R. 26 E.
R. 27 E.
T. 17 S.
T. 18 S.
T. 19 S.
T. 20 S.
T. 21 S.
Fresno Co.
Kings Co.
Kings Co.
Tulare Co.
FRIANT
KERN
CANAL
Woodlake
Hanford
Visalia
Farmersville
Exeter
Tulare
Lindsay
Corcoran
UNIT I
UNIT II
UNIT III
UNIT IV
UNIT V
UNIT VI
99
43
198
216
65
Kaweah Delta
Water Conservation District
Spring 2007 To Spring 2008
Change In Elevation of Groundwater
Lines of Equal Change
Line of Equal Change
10 Foot Interval
Surface Of Elevation Change
Greatest Increase : 69 ft
No Change
Greatest Decrease : -85 ft
N
0
2
4
Miles
Scale = 1:250,000
*Interpretation of contours are limited to the extent of the point data, indicated by each shown well location, used to create the surface. Digital surface areas of groundwater water created beyond the extent of the data (shown in various shades of color without contours) are assumptions and are not considered reliable representations.


R. 21 E.
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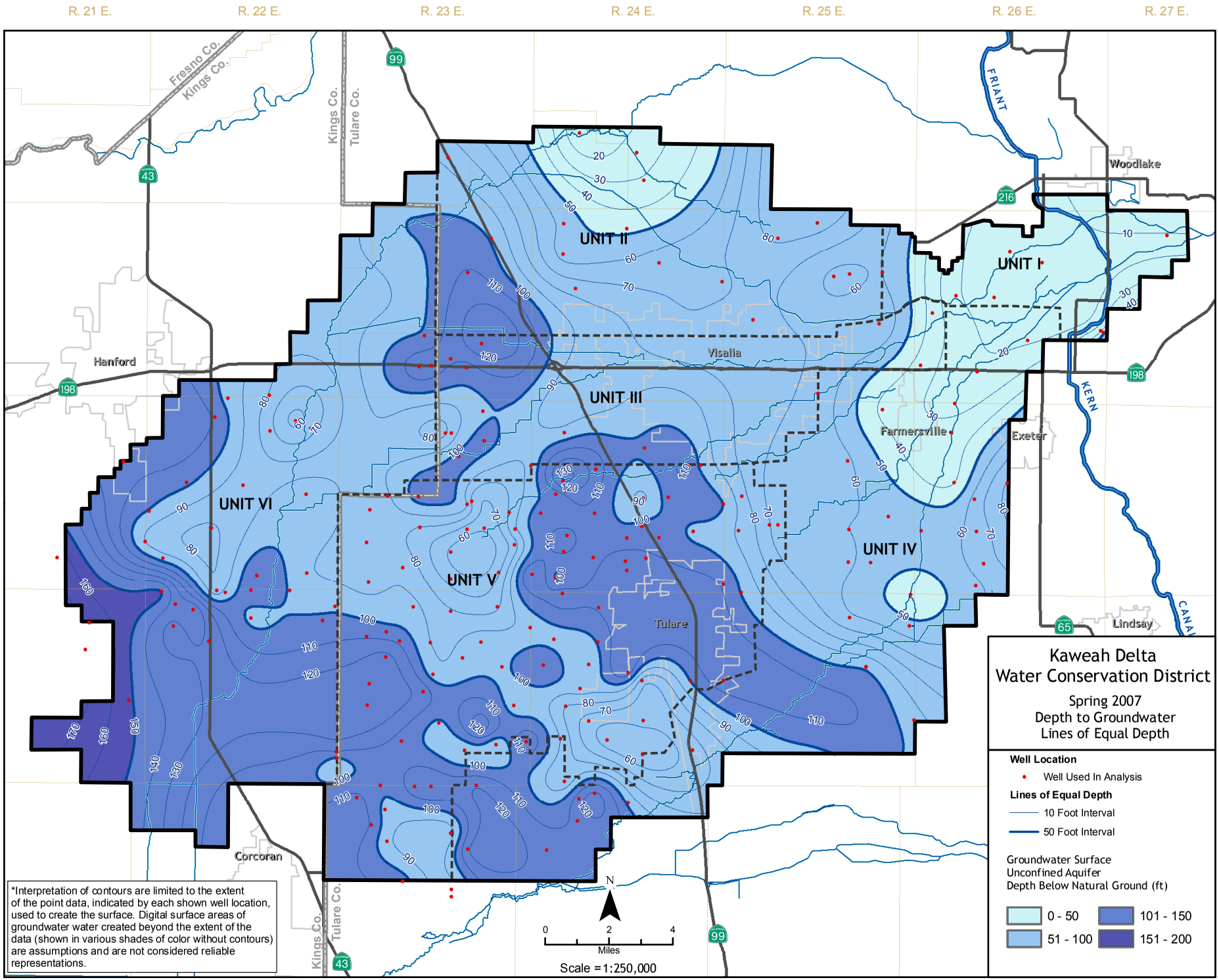
R. 24 E.
R. 25 E.
R. 26 E.
R. 27 E.
T. 17 S.
T. 18 S.
T. 19 S.
T. 20 S.
T. 21 S.
Fresno Co.
Kings Co.
Kings Co.
Tulare Co.
FRIANT
KERN
CANAL
Woodlake
Hanford
Visalia
Farmersville
Exeter
Tulare
Lindsay
Corcoran
UNIT I
UNIT II
UNIT III
UNIT IV
UNIT V
UNIT VI
99
43
198
216
65
*Interpretation of contours are limited to the extent of the point data, indicated by each shown well location, used to create the surface. Digital surface areas of groundwater water created beyond the extent of the data (shown in various shades of color without contours) are assumptions and are not considered reliable representations.
N
0
2
4
Miles
Scale = 1:250,000
Kaweah Delta
Water Conservation District
Fall 2007 To Fall 2008
Change In Elevation of Groundwater
Lines of Equal Change
Line of Equal Change
10 Foot Interval
Surface Of Elevation Change
Greatest Increase : 63 ft
No Change
Greatest Decrease : -51 ft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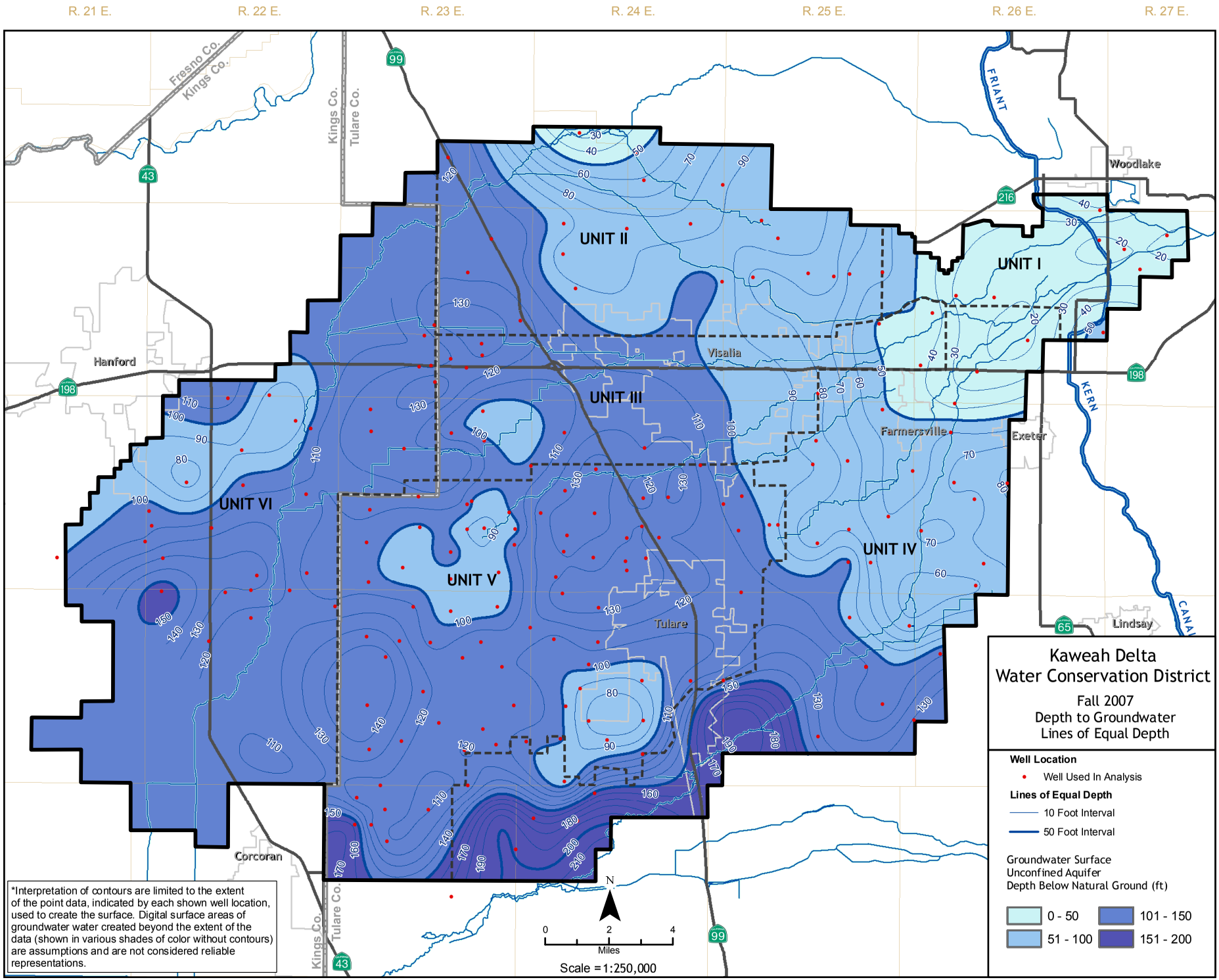
R. 22 E.
R. 23 E.
R. 24 E.
R. 25 E.
R. 26 E.
R. 27 E.
T. 17 S.
T. 18 S.
T. 19 S.
T. 20 S.
T. 21 S.
Fresno Co.
Kings Co.
Tulare Co.
FRIANT
KERN
CANAL
Woodlake
Hanford
Visalia
Farmersville
Exeter
Lindsay
Tulare
Corcoran
UNIT I
UNIT II
UNIT III
UNIT IV
UNIT V
UNIT VI
99
43
198
216
65
*Interpretation of contours are limited to the extent of the point data, indicated by each shown well location, used to create the surface. Digital surface areas of groundwater water created beyond the extent of the data (shown in various shades of color without contours) are assumptions and are not considered reliable representations.
N
0 2 4
Miles
Scale = 1:250,000
Kaweah Delta
Water Conservation District
Spring 2007
Depth to Groundwater
Lines of Equal Depth
Well Location
Well Used In Analysis
Lines of Equal Depth
10 Foot Interval
50 Foot Interval
Groundwater Surface
Unconfined Aquifer
Depth Below Natural Ground (ft)
0 - 50
51 - 100
101 - 150
151 - 200


R. 21 E.
R. 22 E.
R. 23 E.
R. 24 E.
R. 25 E.
R. 26 E.
R. 27 E.
T. 17 S.
T. 18 S.
T. 19 S.
T. 20 S.
T. 21 S.
Fresno Co.
Kings Co.
Kings Co.
Tulare Co.
FRIANT
KERN
CANAL
UNIT I
UNIT II
UNIT III
UNIT IV
UNIT V
UNIT VI
Woodlake
Visalia
Hanford
Farmersville
Exeter
Tulare
Lindsay
Corcoran
99
43
216
198
65
Kaweah Delta
Water Conservation District
Fall 2007
Depth to Groundwater
Lines of Equal Depth
Well Location
Well Used In Analysis
Lines of Equal Depth
10 Foot Interval
50 Foot Interval
Groundwater Surface
Unconfined Aquifer
Depth Below Natural Ground (ft)
0 - 50
51 - 100
101 - 150
151 - 200
*Interpretation of contours are limited to the extent of the point data, indicated by each shown well location, used to create the surface. Digital surface areas of groundwater water created beyond the extent of the data (shown in various shades of color without contours) are assumptions and are not considered reliable representations.
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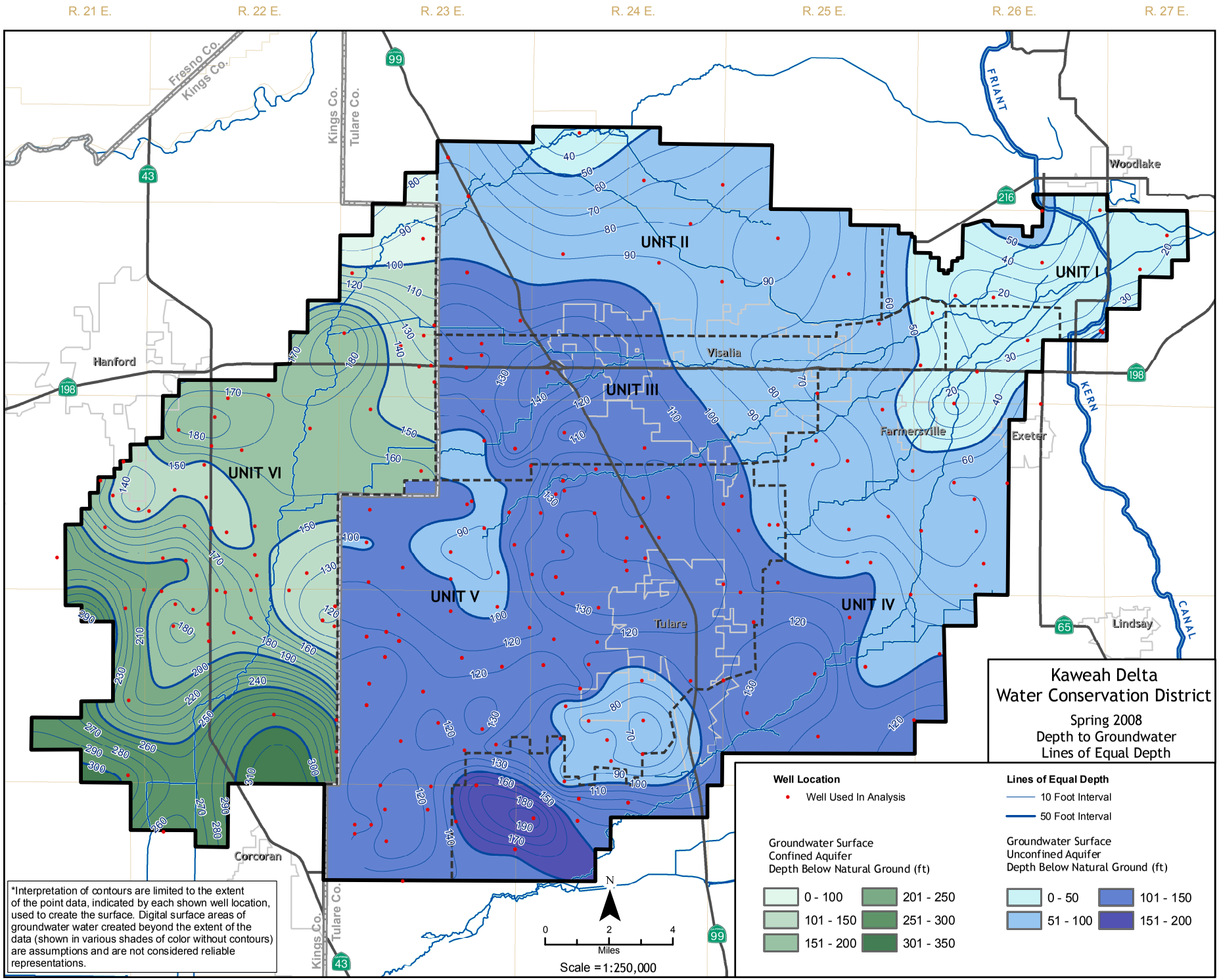
Miles
Scale = 1:250,000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R. 27 E.
T. 17 S.
T. 18 S.
T. 19 S.
T. 20 S.
T. 21 S.
Fresno Co.
Kings Co.
Kings Co.
Tulare Co.
UNIT I
UNIT II
UNIT III
UNIT IV
UNIT V
UNIT VI
Hanford
Visalia
Tulare
Farmersville
Exeter
Lindsay
Woodlake
Corcoran
FRIANT
KERN
CANAL
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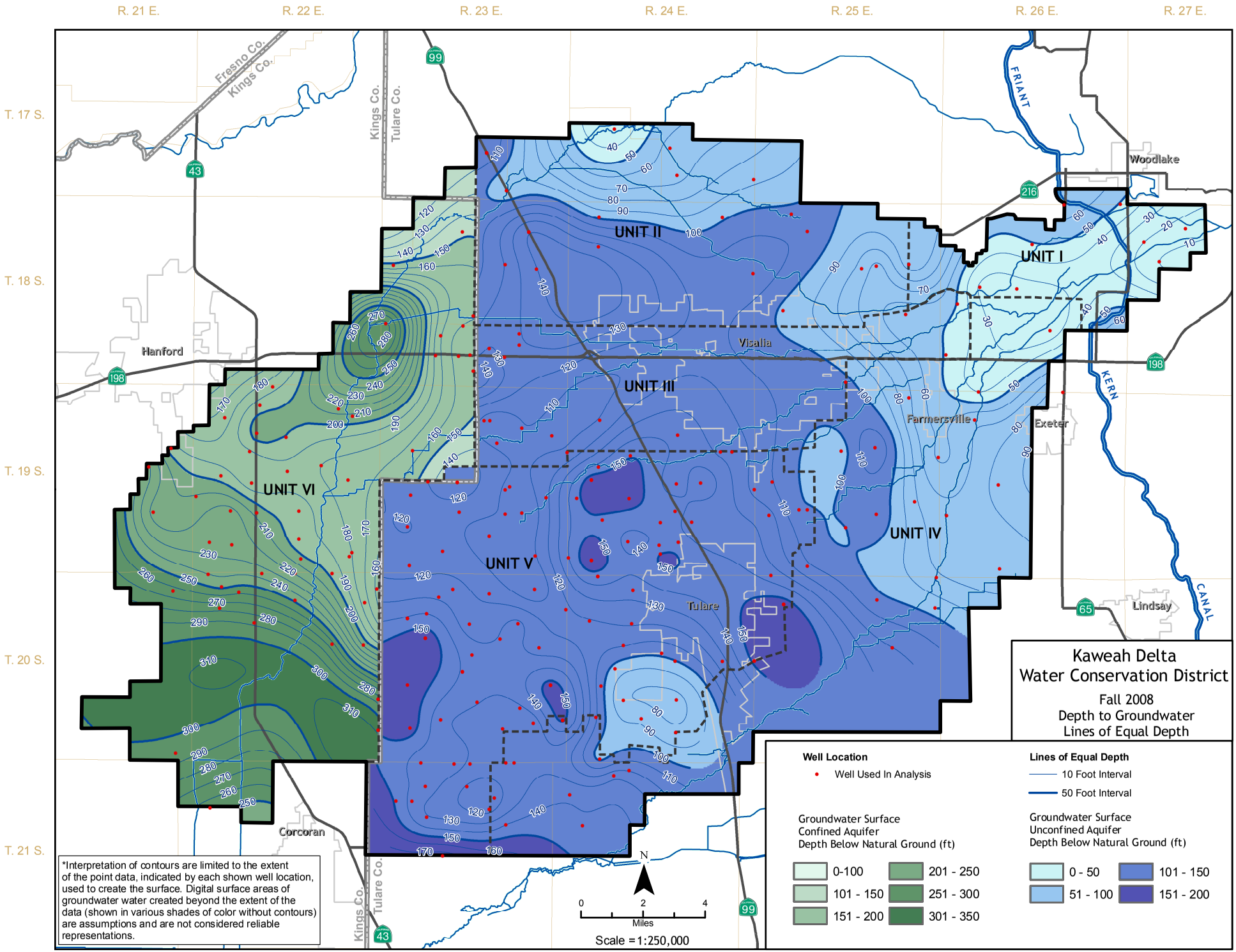
*Interpretation of contours are limited to the extent of the point data, indicated by each shown well location, used to create the surface. Digital surface areas of groundwater water created beyond the extent of the data (shown in various shades of color without contours) are assumptions and are not considered reliable representations.
N
0 2 4
Miles
Scale = 1:250,000
Kaweah Delta
Water Conservation District
Spring 2008
Depth to Groundwater
Lines of Equal Depth
Well Location
Well Used In Analysis
Lines of Equal Depth
10 Foot Interval
50 Foot Interval
Groundwater Surface
Confined Aquifer
Depth Below Natural Ground (ft)
0 - 100
101 - 150
151 - 200
201 - 250
251 - 300
301 - 350
Groundwater Surface
Unconfined Aquifer
Depth Below Natural Ground (ft)
0 - 50
51 - 100
101 - 150
151 - 200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R. 22 E.
R. 23 E.
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R. 25 E.
R. 26 E.
R. 27 E.
T. 17 S.
T. 18 S.
T. 19 S.
T. 20 S.
T. 21 S.
Fresno Co.
Kings Co.
Tulare Co.
UNIT I
UNIT II
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UNIT V
UNIT VI
Hanford
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Farmersville
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Lindsay
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99
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Kaweah Delta
Water Conservation District
Fall 2008
Depth to Groundwater
Lines of Equal Depth
Well Location
Well Used In Analysis
Lines of Equal Depth
10 Foot Interval
50 Foot Interval
Groundwater Surface
Confined Aquifer
Depth Below Natural Ground (ft)
0-100
101 - 150
151 - 200
201 - 250
251 - 300
301 - 350
Groundwater Surface
Unconfined Aquifer
Depth Below Natural Ground (ft)
0 - 50
51 - 100
101 - 150
151 - 200
*Interpretation of contours are limited to the extent of the point data, indicated by each shown well location, used to create the surface. Digital surface areas of groundwater water created beyond the extent of the data (shown in various shades of color without contours) are assumptions and are not considered reliable representations.
N
0
2
4
Miles
Scale = 1:250,000

APPENDIX -B-

2008 Annual Groundwater Management Plan Meeting Minutes

A Groundwater Management Plan Meeting Was Not Held During 2008.

Appendix F

Excerpt from Chapter 4 of Exeter Water System

CHAPTER FOUR

WATER SYSTEM EVALUATION

4.3 Future Water Consumption

The future water requirements were analyzed using the population growth method. This method evaluates the future population growth and the water demand based on the projected population growth. Table 4-3 show the projected water demand and the water capacity based on the future population growth. The table includes two different analyses, Case #1 and Case #2, as described below. Both Cases utilize the 2.88% growth rate from Table 2-1, which is the most conservative approach for supply allowance.

Case #1 assumes that all wells are in service, with the exception of Well E6W. As shown in the Table for Case #1, the current total system capacity is 5,597 gpm. The demand (Max Day plus Fire) based on a projected population of 12,890 in 2012 is 5,707 gpm. Based on this information the City will not have adequate capacity to meet system demand without the use of the 100,000 gallon storage tank which contains about one hour of storage for the average daily demand. Therefore, a new well will be required in 2012. In addition, the demand in 2019, which is based on a population of 15,724, is 6,632 gpm. The capacity in 2019 is 6,597 (assuming a new well is built between 2008 and 2018. Therefore an additional well is required in the year 2019 or when the population reaches approximately 15,724 people.

Case #2 assumes that all wells are in service with the exception of Well E6W and Well E13W (the highest producing well). It is prudent practice to assume a well is out of service at any given time and to design for that contingency, hence the Case #2. In Case #2, the total systems demand for the projected population of 11,506 in the year 2008 is 5,255 gpm. The total capacity for 2008 is 4,097 gpm under this Case. Therefore, the system would not meet the current system demand without the use of the storage tank. To increase the reliability of the system, in this Case, the City should plan at least two additional wells in the near future. In addition, the demand in 2016 which is based on a population of 14,440 is 6,213 gpm. The capacity in 2016 is 6,097 (assuming two new wells are constructed between 2008 and 2015). Therefore, an additional well is required in the year 2016 or when the population reaches approximately 14,440 people.

Please note that both of the above Cases will need to be analyzed and adjusted for actual population numbers for future years, as they occur.

Table 4-3 (Case #1)
Future Water Requirements

		Project Water Use		Water Requirements						
Year	Projected Population	(gallons per year)	(gpcd)	Avg-Day Demand (gpm)	Max-Day Demand Use (gpm)	Max-Day Plus Fire (gpm)	Peak-Hour Demand (gpm)	Current Well Capacity (gpm)	No. of Required New Wells	Total Well Capacity (gpm)
2008	11,506	986,927,150	235	1,878	3,755	5,255	5,633	5,597	0	5,597
2009	11,837	1,015,350,652	235	1,932	3,864	5,364	5,795	5,597	0	5,597
2010	12,178	1,044,592,751	235	1,987	3,975	5,475	5,962	5,597	0	5,597
2011	12,529	1,074,677,022	235	2,045	4,089	5,589	6,134	5,597	0	5,597
2012	12,890	1,105,627,720	235	2,104	4,207	5,707	6,311	5,597	1	6,597
2013	13,261	1,137,469,798	235	2,164	4,328	5,828	6,492	6,597	0	6,597
2014	13,643	1,170,228,929	235	2,226	4,453	5,953	6,679	6,597	0	6,597
2015	14,036	1,203,931,522	235	2,291	4,581	6,081	6,872	6,597	0	6,597
2016	14,440	1,238,604,750	235	2,357	4,713	6,213	7,070	6,597	0	6,597
2017	14,856	1,274,276,566	235	2,424	4,849	6,349	7,273	6,597	0	6,597
2018	15,284	1,310,975,732	235	2,494	4,988	6,488	7,483	6,597	0	6,597
2019	15,724	1,348,731,833	235	2,566	5,132	6,632	7,698	6,597	1	7,597
2020	16,177	1,387,575,309	235	2,640	5,280	6,780	7,920	7,597	0	7,597

NOTES:

Projected Population

Exeter's population is anticipated to grow at an annual rate of 2.88%

Projected Water Use

Projected annual water use is based on population: (235 gpcd x projected population)

Water Requirements

Projected Average Day Demand (235 x projected population)
Maximum Day demand = 2.0 x Average Day Demand
Peak Hour Demand = 3.0 x Average Day Demand
Fire Flow Requirement = 1,500 gpm
Current Well Capacity includes well Nos. 9,10,11,12,13 and 14.
Production capabilities of wells are calculated based on 1,000 gpm

Table 4-3 (Case #2)
Future Water Requirements

		Project Water Use		Water Requirements						
Year	Projected Population	(gallons per year)	(gpcd)	Avg-Day Demand (gpm)	Max-Day Demand Use (gpm)	Max-Day Plus Fire (gpm)	Peak-Hour Demand (gpm)	Current Well Capacity (gpm)	No. of Required New Wells	Total Well Capacity (gpm)
2008	11,506	986,927,150	235	1,878	3,755	5,255	5,633	4,097	2	6,097
2009	11,837	1,015,350,652	235	1,932	3,864	5,364	5,795	6,097	0	6,097
2010	12,178	1,044,592,751	235	1,987	3,975	5,475	5,962	6,097	0	6,097
2011	12,529	1,074,677,022	235	2,045	4,089	5,589	6,134	6,097	0	6,097
2012	12,890	1,105,627,720	235	2,104	4,207	5,707	6,311	6,097	0	6,097
2013	13,261	1,137,469,798	235	2,164	4,328	5,828	6,492	6,097	0	6,097
2014	13,643	1,170,228,929	235	2,226	4,453	5,953	6,679	6,097	0	6,097
2015	14,036	1,203,931,522	235	2,291	4,581	6,081	6,872	6,097	0	6,097
2016	14,440	1,238,604,750	235	2,357	4,713	6,213	7,070	6,097	1	7,097
2017	14,856	1,274,276,566	235	2,424	4,849	6,349	7,273	7,097	0	7,097
2018	15,284	1,310,975,732	235	2,494	4,988	6,488	7,483	7,097	0	7,097
2019	15,724	1,348,731,833	235	2,566	5,132	6,632	7,698	7,097	0	7,097
2020	16,177	1,387,575,309	235	2,640	5,280	6,780	7,920	7,097	0	7,097

NOTES:

Projected Population

Exeter's population is anticipated to grow at an annual rate of 2.88%

Projected Water Use

Projected annual water use is based on population: (235 gpcd x projected population)

Water Requirements

Projected Average Day Demand (235 x projected population)
Maximum Day demand = 2.0 x Average Day Demand
Peak Hour Demand = 3.0 x Average Day Demand
Fire Flow Requirement = 1,500 gpm
Current Well Capacity includes well Nos. 9,10,11,12 and 14.
Production capabilities of wells are calculated based on 1,000 gpm

Appendix G

2007 EPA MCL's

MAXIMUM CONTAMINANT LEVELS AND REGULATORY DATES FOR DRINKING WATER U.S. EPA VS CALIFORNIA

NOVEMBER 2008

Contaminant	U.S. EPA		California	
	MCL (mg/L)	**Date**[a]	**MCL** (mg/L)	**Effective Date**
Inorganics				
Aluminum	0.05 to 0.2[b]	1/91	1 0.2[b]	2/25/89 9/8/94
Antimony	0.006	7/92	0.006	9/8/94
Arsenic	0.05 0.010	eff: 6/24/77 eff: 1/23/06	0.05 0.010	77 11/28/08
Asbestos	7 MFL[c]	1/91	7 MFL[c]	9/8/94
Barium	1 2	eff: 6/24/77 1/91	1	77
Beryllium	0.004	7/92	0.004	9/8/94
Cadmium	0.010 0.005	eff: 6/24/77 1/91	0.010 0.005	77 9/8/94
Chromium	0.05 0.1	eff: 6/24/77 1/91	0.05	77
Copper	1.3[d]	6/91	1[b] 1.3[d]	77 12/11/95
Cyanide	0.2	7/92	0.2 0.15	9/8/94 6/12/03
Fluoride	4 2[b]	4/86 4/86	2	4/98
Lead	0.05[e] 0.015[d]	eff: 6/24/77 6/91	0.05[e] 0.015[d]	77 12/11/95
Mercury	0.002	eff: 6/24/77	0.002	77
Nickel	Remanded		0.1	9/8/94
Nitrate	(as N) 10	eff: 6/24/77	(as N03) 45	77
Nitrite (as N)	1	1/91	1	9/8/94
Total Nitrate/Nitrite (as N)	10	1/91	10	9/8/94
Perchlorate	-	-	0.006	10/18/07
Selenium	0.01 0.05	eff: 6/24/77 1/91	0.01 0.05	77 9/8/94
Thallium	0.002	7/92	0.002	9/8/94
Radionuclides				
Uranium	30 ug/L	12/7/00	20 pCi/L 20 pCi/L	1/1/89 6/11/06
Combined Radium - 226+228	5 pCi/L	eff: 6/24/77	5 pCi/L 5 pCi/L	77 6/11/06
Gross Alpha particle activity (excluding radon & uranium)	15 pCi/L	eff: 6/24/77	15 pCi/L 15 pCi/L	77 6/11/06
Gross Beta particle activity	4 millirem/yr	eff: 6/24/77	50 pCi/L[f] 4 millirem/yr	77 6/11/06
Strontium-90	8 pCi/L	eff: 6/24/77 now covered by Gross Beta	8 pCi/L[f] 8 pCi/L[f]	77 6/11/06
Tritium	20,000 pCi/L	eff: 6/24/77 now covered by Gross Beta	20,000 pCi/L[f] 20,000 pCi/L[f]	77 6/11/06

Contaminant	U.S. EPA		California	
	MCL (mg/L)	**Date**[a]	**MCL** (mg/L)	**Effective Date**
VOCS				
Benzene	0.005	6/87	0.001	2/25/89
Carbon Tetrachloride	0.005	6/87	0.0005	4/4/89
1,2-Dichlorobenzene	0.6	1/91	0.6	9/8/94
1,4-Dichlorobenzene	0.075	6/87	0.005	4/4/89
1,1-Dichloroethane	-	-	0.005	6/24/90
1,2-Dichloroethane	0.005	6/87	0.0005	4/4/89
1,1-Dichloroethylene	0.007	6/87	0.006	2/25/89
cis-1,2-Dichloroethylene	0.07	1/91	0.006	9/8/94
trans-1,2-Dichloroethylene	0.1	1/91	0.01	9/8/94
Dichloromethane	0.005	7/92	0.005	9/8/94
1,3-Dichloropropene	-	-	0.0005	2/25/89
1,2-Dichloropropane	0.005	1/91	0.005	6/24/90
Ethylbenzene	0.7	1/91	0.68 0.7 0.3	2/25/89 9/8/94 6/12/03
Methyl-tert-butyl ether (MTBE)	-	-	0.005[b] 0.013	1/7/99 5/17/00
Monochlorobenzene	0.1	1/91	0.03 0.07	2/25/89 9/8/94
Styrene	0.1	1/91	0.1	9/8/94
1,1,2,2-Tetrachloroethane	-	-	0.001	2/25/89
Tetrachloroethylene	0.005	1/91	0.005	5/89
Toluene	1	1/91	0.15	9/8/94
1,2,4 Trichlorobenzene	0.07	7/92	0.07 0.005	9/8/94 6/12/03
1,1,1-Trichloroethane	0.200	6/87	0.200	2/25/89
1,1,2-Trichloroethane	0.005	7/92	0.032 0.005	4/4/89 9/8/94
Trichloroethylene	0.005	6/87	0.005	2/25/89
Trichlorofluoromethane	-	-	0.15	6/24/90
1,1,2-Trichloro-1,2,2-Trifluoroethane	-	-	1.2	6/24/90
Vinyl chloride	0.002	6/87	0.0005	4/4/89
Xylenes	10	1/91	1.750	2/25/89

Contaminant	U.S. EPA		California	
	MCL (mg/L)	**Date**[a]	**MCL** (mg/L)	**Effective Date**
SOCS				
Alachlor	0.002	1/91	0.002	9/8/94
Atrazine	0.003	1/91	0.003 0.001	4/5/89 6/12/03
Bentazon	-	-	0.018	4/4/89
Benzo(a) Pyrene	0.0002	7/92	0.0002	9/8/94
Carbofuran	0.04	1/91	0.018	6/24/90
Chlordane	0.002	1/91	0.0001	6/24/90
Dalapon	0.2	7/92	0.2	9/8/94
Dibromochloropropane	0.0002	1/91	0.0001 0.0002	7/26/89 5/3/91
Di(2-ethylhexyl)adipate	0.4	7/92	0.4	9/8/94
Di(2-ethylhexyl)phthalate	0.006	7/92	0.004	6/24/90
2,4-D	0.1 0.07	eff: 6/24/77 1/91	0.1 0.07	77 9/8/94
Dinoseb	0.007	7/92	0.007	9/8/94
Diquat	0.02	7/92	0.02	9/8/94
Endothall	0.1	7/92	0.1	9/8/94
Endrin	0.0002 0.002	eff: 6/24/77 7/92	0.0002 0.002	77 9/8/94
Ethylene Dibromide	0.00005	1/91	0.00002 0.00005	2/25/89 9/8/94
Glyphosate	0.7	7/92	0.7	6/24/90
Heptachlor	0.0004	1/91	0.00001	6/24/90
Heptachlor Epoxide	0.0002	1/91	0.00001	6/24/90
Hexachlorobenzene	0.001	7/92	0.001	9/8/94
Hexachlorocyclopentadiene	0.05	7/92	0.05	9/8/94
Lindane	0.004 0.0002	eff: 6/24/77 1/91	0.004 0.0002	77 9/8/94
Methoxychlor	0.1 0.04	eff: 6/24/77 1/91	0.1 0.04 0.03	77 9/8/94 6/12/03
Molinate	-	-	0.02	4/4/89
Oxamyl	0.2	7/92	0.2 0.05	9/8/94 6/12/03
Pentachlorophenol	0.001	1/91	0.001	9/8/94
Picloram	0.5	7/92	0.5	9/8/94
Polychlorinated Biphenyls	0.0005	1/91	0.0005	9/8/94
Simazine	0.004	7/92	0.010 0.004	4/4/89 9/8/94
Thiobencarb	-	-	0.07 0.001[b]	4/4/89 4/4/89
Toxaphene	0.005 0.003	eff: 6/24/77 1/91	0.005 0.003	77 9/8/94
2,3,7,8-TCDD (Dioxin)	$3x10^{-8}$	7/92	$3x10^{-8}$	9/8/94
2,4,5-TP (Silvex)	0.01 0.05	eff: 6/24/77 1/91	0.01 0.05	77 9/8/94

Contaminant	U.S. EPA		California	
	MCL (mg/L)	**Date**[a]	**MCL** (mg/L)	**Effective Date**
Disinfection Byproducts				
Total Trihalomethanes	0.100 0.080	11/29/79 eff: 11/29/83 eff: 1/1/02 [g]	0.100 0.080	3/14/83 6/17/06
Haloacetic acids (five)	0.060	eff: 1/1/02 [g]	0.060	6/17/06
Bromate	0.010	eff: 1/1/02 [g]	0.010	6/17/06
Chlorite	1.0	eff: 1/1/02 [g]	1.0	6/17/06
Treatment Technique				
Acrylamide	TT[h]	1/91	TT[h]	9/8/94
Epichlorohydrin	TT[h]	1/91	TT[h]	9/8/94

a. "eff." indicates the date the MCL took effect; any other date provided indicates when USEPA established (i.e., published) the MCL.
b. Secondary MCL.
c. MFL = million fibers per liter, with fiber length > 10 microns.
d. Regulatory Action Level; if system exceeds, it must take certain actions such as additional monitoring, corrosion control studies and treatment, and for lead, a public education program; replaces MCL.
e. The MCL for lead was rescinded with the adoption of the regulatory action level described in footnote d.
f. Gross beta MCL is 4 millirem/year annual dose equivalent to the total body or any internal organ; Sr-90 MCL = 4 millirem/year to bone marrow; tritium MCL = 4 millirem/year to total body
g. Effective for surface water systems serving more than 10,000 people; effective for all others 1/1/04.
h. TT = treatment technique, because an MCL is not feasible.

Appendix H

2006 Exeter Consumer Report

The City of Exeter
2006 Consumer Report

(Este informe contiente informacion muy importante sobre su agua de beber. Traduzcalo o hable con alguien que lo entienda bien)

The City of Exeter is pleased to present to you this year's Annual Water Quality Report. This report is designed to inform you about the quality of water and services we deliver to you every day. Our constant goal is to provide you with a safe and dependable supply of drinking water. We want you to understand the effort we make to continually improve the water treatment process and protect our water resources. We are committed to ensuring the quality of your water.

The City of Exeter's water is taken from underground aquifers by four wells located throughout the City. Some cities use other sources of water, like lakes, reservoirs, or streams, but none of this type of water is used in the City of Exeter. **Exeter uses groundwater only.** The City of Exeter does chlorinate its ground water to assure a safe supply of water. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and in some cases, radioactive materials, and can pick up substances resulting from the presence of animals or from human activity. Contaminants that my be present in source water include.

Microbial contaminants, such as viruses and bacteria that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.

Inorganic contaminants, such as salts and metals, that can be naturally-occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.

Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.

Organic chemical contaminants, including synthetic and volatile organic chemicals that are by products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems.

Radioactive contaminants, which can be naturally-occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, USEPA and California Department of Health Service Department prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. Department regulations also establish limits for contaminants in bottled water that must provide the same protection for public health.

A source water assessment was conducted for the water supply wells that supply the City of Exeter water system in September 2001.

The sources are considered most vulnerable to the following activities associated with contaminants detected in the water supply:
Fertilizer, Pesticide/Herbicide Application

The sources are considered most vulnerable to the following activities not associated with any detected contaminants:
Automobile-Gas Stations
Historic Gas Stations
Metal plating/finishing/fabricating

A source water assessment was conducted for the new City of Exeter Well E12W in June 2004.

The source is considered most vulnerable to the following activity not associated with any detected contaminants:

Septic system – high density (>1/acre)

A copy of the completed assessment may be viewed at
City of Exeter
137 N. F Street

You may request a summary of the assessment be sent to you by contacting:
Felix Ortiz, Public Works Director
(559) 592-2523

I am pleased to report that our drinking water is safe and meets all federal and state requirements. If you have any questions about this report or concerning your water utility, please contact the Public Works Director, Felix Ortiz at (559) 592-3318 or visit him at the City's Corporation Yard at 350 W. Firebaugh, Exeter. We want our valued customers to be informed about their water utility. If you would like to raise a concern to the City Council, you may call City Hall at (559) 592-9244 to inquire about being placed on the agenda. The Exeter City Council has two regularly scheduled meetings each month. They are scheduled on the 2nd and 4th Tuesday at 7 p.m. It is within your right to inquire about the water provided to you by the City.

The City of Exeter routinely monitors for contaminants in your drinking water according to Federal and State laws. This table shows the results of our monitoring for the period of January 1 to December 31, 2006. All drinking water, including bottled drinking water, may be reasonably expected to contain at least small amounts of some contaminants. It is important to remember that the presence of these contaminants does not necessarily pose a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791. Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplant, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from the health care providers. USEPA/Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by Crytosporidum and other microbial contaminants are available from the Safe Drinking Water Hotline 1-800-426-4791.

In this table you will find many terms and abbreviations you might not be familiar with. To help you better understand these terms we've provided the following definitions:

Non Detects (ND) - No detectable at testing limit.

Parts per million (ppm) or **Milligram per liter (mg/l):** one part per million corresponds to one minute in two years or a single penny in $10,000.

Parts per billion (ppb) or **Microgram per liter (ug/l):** one part per billion corresponds to one minute 2,000 years or a single penny in $10,000,000.

Parts per trillion (ppt) or **Nanograms per liter (ng/l)** - one part per trillion corresponds to one minute in 2,000,000 years or one penny in $10,000,000,000.

Parts per quadrillion (ppq) or **(Picograms per liter (picograms/l)** - one part per quadrillion corresponds to one minute in 2,000,000,000 years or one penny in $10,000,000,000,000.

Picocuries per liter (pCi/L) - Picocuries per liter is a measure of the radioactivity in water.

Million Fibers per Liter (MFL) - Million Fibers per liter is a measure of the presence of asbestos fiber that is longer than 10 micrometers.

Nephelometric Turbidity Unit (NTU) - Nephelmetric Turbidity unit is a measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

Regulatory Action Level (AL) - The concentration of a contaminant, which if exceeded, triggers treatment or other requirements, which a water system must follow.

Treatment Technique (TT) - A treatment technique is a required process intended to reduce the level of a contaminant in drinking water.

Maximum Contaminant Level- "The Maximum Allowed" (MCL) - is the highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the MCLGs as feasible using the best available treatment technology. Secondary MCLs are set to protect the odor, taste and appearance of drinking water.

Maximum Contaminant Level Goal - The "Goal" (MCLG) - is the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety. MCLGs are set by the U.S. Environmental Protection Agency (USEPA).

Public Health Goal or PHG - the level of contaminant in drinking water below, which there is no known or expected risk to health. PHGs are set by the California Environmental Protection Agency.

Primary Drinking Water Standard or PDWS - MCLs for contaminants that affect health along with their monitoring and reporting requirements, and water treatment requirements.

As you can see by the table, our system had no violations. We are proud that your drinking water meets or exceeds call Federal and State requirements. We have learned through our monitoring and testing that some contaminants have been detected. The EPA has determined that your water IS SAFE at these levels.

The City of Exeter
2006 Consumer Confidence Report

Microbiological Contaminants

Contaminant	Highest No. of detection in a month	No. of Months in violation	Range	Unit Measurement	MCL	PHG	MCLG	Likely Source of Contamination	
Total Coliform Bacteria	0	0			"No more than 1 positive monthly sample	N/A	0	Naturally present in the environment	
Fecal coliform and *E. coli*	0	0			a routine sample and repeat sample are total coliform positive, and one is also fecal coliform or *E. coli* positive	N/A	0	Human and animal waste	

Lead and Copper

	No. of Samples Collected	90th percentile level detected	No. Sites exceeding AL	AL	MCL	PHG	MCLG		
Lead (ppb)	20	0.005	1	15	N/A	N/A	2		
Copper (ppm)	20	0.18	0	1.3	N/A	N/A	0.17		

Microbiological Contaminants

Contaminant	Violation Y/N	Level Detected	Range	Unit Measurement	MCL	PHG	MCLG	Likely Source of Contamination	Health Effect Language
Turbidity	No	1.5	0.45	NTU	TT	N/A	N/A	Soil runoff	

Radioactive Contaminants

Alpha Activity, Gross	No	7.4	.77-11.2	pCi/L	15	N/A	N/A	Erosion of natural deposits	"Certain minerals are radioactive and may emit a form of radiation known as alpha radiation. Some people who drink water containing alpha emitters in excess of the MCL over many years may have an increased risk of getting cancer."
Uranium	No	4.11	ND-7.4	pCi/L	20	N/A	N/A	Erosion of natural deposits	"Some people who drink water containing uranium in excess of MCL over many years may have an increased risk of getting cancer."
Radium 228	.58	.22-.94	pCi/L	5	N/A	N/A		Erosion of natural deposits	

Inorganic Contaminants

Barium	No	0.13	.09-.19	ppm	1	N/A	2	Discharge of oil drilling wastes and from metal refineries; erosion of natural deposits	"Some people who drink water containing barium in excess of the MCL over many years may experience an increase in blood pressure."
Chromium	No	2	2-2	ppb	50	2.5	N/A	Discharge from steel and pulp mills and chrome plating; erosion of natural deposits	
Nitrate (as NO_3)	No	25.6	16-44	ppm	45	45	N/A	Runoff and leaching from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits	"Nitrate in drinking water at levels above 45 ppm is a health risk for infants of less than six months of age. Such nitrate levels in drinking water can interfere with the capacity of the infant's blood to carry oxygen, resulting in serious illness; symptoms include shortness of breath and blueness of the skin. Nitrate levels above 45 ppm may also affect the ability of the blood to carry oxygen in other individuals, such as pregnant women and those with specific enzyme deficiencies.

Synthetic Organic Contaminants including Pesticides and Herbicides

Dibromochloropropane (DBCP)	No	150	20-360	ppt	200	1.7	N/A	Banned nematocide that may still be present in soils due to runoff/leaching from former use on soybeans, cotton, vineyards, tomatoes, and tree fruit	"Some people who use water containing DBCP in excess of the MCL over many years may experience reproductive difficulties and may have an increase risk of getting cancer."

Volatile Organic Contaminants

TTHM (Total Trihalomethanes)	No	0.17	ND-.52	ppb	100	N/A	0	By-product of drinking water chlorination	

Secondary Drinking Water Standards

Odor-Threshold	No	1	1	Units	3 Units	N/A	N/A	N/A	
Turbidity	No	0.1	N/D-0.1	Units	5 Units	N/A	N/A	N/A	

Secondary Drinking Water Standards cont.									
Total Dissolved Solids (TDS	NO	393.3	300-510	ppm	1000	N/A	N/A	N/A	
Specific Conductance	NO	597.5	400-750	micromhos	1600	N/A	N/A	N/A	
Chloride	NO	37.3	14-80	ppm	500	N/A	N/A	N/A	
Sodium	NO	46.3	40-54	mg/L	N/A				
Hardness	NO	233	160-320	mg/L	N/A				
Sulfate	NO	34.3	26-43	ppm	500	N/A	N/A	N/A	

Appendix I

Exeter Well Pumping Records

City of Exeter
1996 Well Pumping Record
Gallons

Month	E-6W	E-9W	E-10W	E-11W	TOT. GALLONS
JANUARY	21,728,200	8,725,300	94,000	3,064,300	33,611,800
FEBRUARY	12,199,400	21,400	105,000	28,361,500	40,686,300
MARCH	14,491,600	11,184,500	2,803,000	9,230,300	26,524,900
APRIL	13,962,100	10,784,600	79,400	25,662,200	50,488,300
MAY	31,969,600	3,810,600	1,048,000	48,332,100	86,160,300
JUNE	44,716,400	2,770,800	12,642,000	41,051,600	101,180,800
JULY	45,400,290	15,329,600	6,605,000	41,020,600	108,355,490
AUGUST	45,732,400	14,388,200	4,962,000	41,392,900	106,475,500
SEPTEMBER	43,791,400	4,258,200	36,100	33,665,900	81,751,600
OCTOBER	22,479,300	3,546,800	66,000	36,686,900	62,779,000
NOVEMBER	15,329,400	9,753,200	1,672,000	8,729,200	35,483,800
DECEMBER	8,319,8OO	6,719,800	15,000	18,807,700	33,862,300
TYD TOTAL	297,640,590	91,293,000	30,127,500	336,005,200	767,360,090

City of Exeter
1997 Well Pumping Record
Gallons

Month	E-6W	E-9W	E-10W	E-11W	TOT. GALLONS
JANUARY	19,110,800	6,604,300	27,000	7,007,700	32,749,800
FEBRUARY	18,641,600	3,246,000	94,000	8,753,800	30,735,400
MARCH	26,364,300	8,574,800	7,345,000	5,853,000	48,137,100
APRIL	42,707,700	7,542,000	946,000	11,958,100	63,153,800
MAY	39,129,000	8,614,500	328,000	37,494,800	88,466,300
JUNE	42,803,600	11,995,600	3,086,000	42,093,900	99,979,100
JULY	40,382,100	14,222,700	7,151,000	41,152,400	102,908,200
AUGUST	24,327,352	1,891,200	50,204,000	23,660,800	100,083,352
SEPTEMBER	22,591,400	11,935,500	27,284,000	15,916,600	77,727,500
OCTOBER	21,313,400	6,538,900	21,273,000	8,769,400	57,894,700
NOVEMBER	4,375,200	25,400	22,000	36,259,100	40,681,700
DECEMBER	20,705,000	0	104,000	12,729,400	33,538,400
TYD TOTAL	322,451,452	81,190,900	117,864,000	251,649,000	776,055,352

City of Exeter
1998 Well Pumping Record
Gallons

Month	E-6W	E-9W	E-10W	E-11W	TOT. GALLONS
JANUARY	17,621,300	184,100	0	13,972,200	31,777,600
FEBRUARY	9,482,900	2,097,800	19,000	15,338,660	26,938,360
MARCH	33,741,000	14,800	O	1,146,500	34,902,300
APRIL	7,538,400	4,859,900	79,000	26,241,000	38,718,300
MAY	8,761,700	3,644,200	24,245,000	14,901,500	51,552,400
JUNE	3,255,700	11,933,500	34,204,000	25,494,900	74,888,100
JULY	6,383,500	2,040	63,195,000	32,702,500	102,283,040
AUGUST	10,179,500	18,510,500	57,228,000	18,123,600	104,041,600
SEPTEMBER	33,769,800	3,704,200	403,000	42,294,500	80,171,500
OCTOBER	12,459,900	2,223,400	17,649,000	28,085,000	60,417,300
NOVEMBER	37,447,100	67,100	32,000	1,493,300	39,039,500
DECEMBER	3,390,800	11,479,500	21,447,000	46,400	36,363,700
TYD TOTAL	184,031,600	58,721,040	218,501,000	219,840,060	681,093,700

City of Exeter
1999 Well Pumping Record
Gallons

Month	E-6W	E-9W	E-10W	E-11W	TOT. GALLONS
JANUARY	121,800	11,580,700	24,045,000	254,200	36,001,700
FEBRUARY	566,200	455,700	1,011,000	29,037,600	31,070,500
MARCH	3,169,300	19,100	3,100	39,136,300	42,327,800
APRIL	21,068,700	3,129,700	11,400	25,314,500	49,524,300
MAY	2,348,900	17,515,000	52,424,000	8,843,700	81,131,600
JUNE	413,300	25,037,500	62,431,000	8,997,700	96,879,500
JULY	29,743,200	802,200	63,377,000	10,282,300	104,204,700
AUGUST	24,889,200	30,456,200	0	39,815,800	95,161,200
SEPTEMBER	13,934,700	28,420,400	217,200	41,116,000	83,688,300
OCTOBER	14,022,900	6,790,500	30,207,300	16,977,000	67,997,700
NOVEMBER	18,139,900	12,000	23,221,700	29,100	41,402,700
DECEMBER	15,151,600	0	23,537,700	65,000	38,754,300
TYD TOTAL	143,569,700	124,219,000	280,486,400	219,869,200	768,144,300

City of Exeter
2000 Well Pumping Record
Gallons

Month	E-6W	E-9W	E-10W	E-11W	TOT. GALLONS
JANUARY	1,247,500	1,032,300	1,420,400	32,845,000	36,545,200
FEBRUARY	21,433,900	349,300	27,600	10,448,700	32,259,500
MARCH	10,496,200	3,300	12,951,400	17,839,600	41,290,500
APRIL	6,900	12,998,900	35,716,900	10,497,000	59,219,700
MAY	30,760,300	4,373,300	23,544,900	19,055,500	77,734,000
JUNE	29,711,200	100,900	60,874,100	3,779,000	94,465,200
JULY	28,313,900	4,846,000	64,771,600	5,468,000	103,399,500
AUGUST	19,062,200	12,963,600	60,618,800	10,881,800	103,526,400
SEPTEMBER	21,663,700	0	53,712,000	6,193,300	81,569,000
OCTOBER	14,278,900	0	330,400	43,688,100	58,297,400
NOVEMBER	14,267,000	0	17,631,500	10,192,800	42,091,300
DECEMBER	16,436,402	0	22,814,400	0	39,250,802
TYD TOTAL	207,678,102	36,667,600	354,414,000	170,888,800	769,648,502

City of Exeter
2001 Well Pumping Record
Gallons

Month	E-6W	E-9W	E-10W	E-11W	TOT. GALLONS
JANUARY	9,445,800	0	21,867,700	6,355,900	37,669,400
FEBRUARY	9,290,500	8,200	12,940,000	9,306,500	31,545,200
MARCH	39,197,600	0	0	5,345,700	44,543,300
APRIL	40,454,300	0	1,704,600	7,887,500	50,046,400
MAY	3,858,800	0	59,844,900	27,357,100	91,060,800
JUNE	8,367,600	0	61,461,900	36,118,000	105,947,500
JULY	5,320,900	10,457,600	61,886,600	31,392,000	109,057,100
AUGUST	337,700	803,100	61,298,400	33,896,200	96,335,400
SEPTEMBER	5,514,500	24,240,300	40,833,900	18,024,000	88,612,700
OCTOBER	6,520,400	33,696,300	0	31,949,700	72,166,400
NOVEMBER	9,324,300	10,173,100	16,208,700	9,155,500	44,861,600
DECEMBER	18,175,000	5,762,300	21,600	11,135,100	35,094,000
TYD TOTAL	155,807,400	85,140,900	338,068,300	227,923,200	806,939,800

City of Exeter
2002 Well Pumping Record
Gallons

Month	E-6W	E-9W	E-10W	E-11W	TOT. GALLONS
JANUARY	249,600	26,402,100	0	8,504,800	35,156,500
FEBRUARY	25,697,300	5,332,100	0	2,866,900	33,896,300
MARCH	9,946,000	22,150,300	5,912,900	7,927,600	45,936,800
APRIL	10,289,600	3,042,900	38,558,700	8,278,700	60,169,900
MAY	22,831,100	18,376,500	21,661,100	17,727,900	80,596,600
JUNE	16,616,600	4,802,000	44,430,900	35,478,200	101,327,700
JULY	10,655,500	285,200	64,073,700	38,322,000	113,336,400
AUGUST	25,555,200	24,302,900	18,323,500	38,053,600	106,235,200
SEPTEMBER	20,765,100	29,875,900	1,311,300	36,499,300	88,451,600
OCTOBER	13,043,400	7,079,700	39,224,800	9,131,100	68,479,000
NOVEMBER	6,555,800	4,209,700	14,872,900	16,122,000	41,760,400
DECEMBER	1,442,500	2,096,500	2,517,300	31,276,600	37,332,900
TYD TOTAL	163,647,700	147,955,800	250,887,100	250,188,700	812,679,300

City of Exeter
2003 Well Pumping Record
Gallons

Month	E-6W	E-9W	E-10W	E-11W	TOT. GALLONS
JANUARY	3,298,600	1,588,700	6,170,800	24,577,900	35,636,000
FEBRUARY	2,758,800	1,866,000	5,022,700	23,291,800	32,939,300
MARCH	3,877,000	8,542,700	5,764,600	29,019,800	47,204,100
APRIL	649,400	11,031,800	16,100	37,515,800	49,213,100
MAY	13,724,500	22,084,000	11,219,700	21,576,500	68,604,700
JUNE	31,661,200	31,211,900	6,493,500	37,849,600	107,216,200
JULY	35,970,100	32,149,200	11,572,600	39,200,700	118,892,600
AUGUST	31,813,200	31,521,600	6,557,400	38,276,200	108,168,400
SEPTEMBER	25,740,100	29,734,200	3,355,500	36,677,800	95,507,600
OCTOBER	20,782,000	21,523,500	221,400	34,416,900	76,943,800
NOVEMBER	25,098,600	10,380,000	2,197,200	7,792,400	45,468,200
DECEMBER	0	9,751,200	20,446,500	10,090,700	40,288,400
TYD TOTAL	195,373,500	211,384,800	79,038,000	340,286,100	826,082,400

City of Exeter
2004 Well Pumping Record
Gallons

Month	E-6W	E-9W	E-10W	E-11W	TOT. GALLONS
JANUARY	67,200	0	21,928,700	14,798,600	36,794,500
FEBRUARY	0	3,950,600	20,376,900	8,908,300	33,235,800
MARCH	0	33,446,500	18,011,700	208,300	51,666,500
APRIL	0	33,705,100	36,860,800	1,332,600	71,898,500
MAY	0	30,374,200	32,949,556	34,358,000	97,681,756
JUNE	0	27,693,700	41,921,500	37,102,800	106,718,000
JULY	0	30,864,000	48,048,700	39,514,200	118,426,900
AUGUST	0	29,588,300	44,736,400	39,042,100	113,366,800
SEPTEMBER	0	30,891,000	25,696,900	38,245,900	94,833,800
OCTOBER	0	32,975,700	19,123,000	12,877,200	64,975,900
NOVEMBER	0	17,636,100	9,978,800	8,634,900	36,249,800
DECEMBER	0	8,362,200	12,206,500	15,328,200	35,896,900
TYD TOTAL	67,200	279,487,400	331,839,456	250,351,100	861,745,156

City of Exeter
2005 Well Pumping Record
Gallons

Month	E-6W	E-9W	E-10W	E-11W	E-12W	TOT. GALLONS
JANUARY	0	28343000	5940600	0	0	34,283,600
FEBRUARY	3400100	21604600	6,044,000	1,255,900	0	32,304,600
MARCH	0	30470100	7883300	9400	0	38,362,800
APRIL	0	30145300	12894900	10025100	0	53,065,300
MAY	0	21162500	9847000	39592900	0	70,602,400
JUNE	0	30578100	30917100	40049800	0	101,545,000
JULY	7829700	31104300	34358700	40027500	6102000	119,422,200
AUGUST	11221100	30546200	27109800	39219800	10521000	118,617,900
SEPTEMBER	3751300	27691600	15105000	37598600	10137000	94,283,500
OCTOBER	0	20846800	6257200	39398100	10464000	76,966,100
NOVEMBER	0	6687800	255500	36692000	10166000	53,801,300
DECEMBER	0	640600	1900	30078700	10681000	41,402,200
TYD TOTAL	26,202,200	279,820,900	156,615,000	313,947,800	58,071,000	834,656,900

City of Exeter
2006 Well Pumping Record
Gallons

Month	E-6W	E-9W	E-10W	E-11W	E-12W	TOT. GALLONS
JANUARY	0	304,300	19,000	27,504,400	10,694,000	38,521,700
FEBRUARY	0	3,730,200	10,990,100	15,341,000	9,669,000	39,730,300
MARCH	0	411,200	3,600	27,961,604	10,824,000	39,200,404
APRIL	0	1,862,400	0	29,154,700	10,550,000	41,567,100
MAY	0	23,952,300	10,525,700	39,599,100	10,762,000	84,839,100
JUNE	0	28,869,000	33,093,300	38,508,600	9,420,000	109,890,900
JULY	10,217,700	30,465,400	39,177,700	36,342,700	8,692,000	124,895,500
AUGUST	10,085,200	31,621,800	31,009,500	36,950,800	9,719,000	119,386,300
SEPTEMBER	7,297,300	26,233,200	19,083,600	38,104,100	10,180,000	100,898,200
OCTOBER	142,300	19,457,900	4,038,900	39,624,500	10,382,000	73,645,600
NOVEMBER	0	7,498,500	313,000	37,082,900	9,951,000	54,845,400
DECEMBER	0	1,668,700	10,600	33,998,500	10,142,000	45,819,800
TYD TOTAL	27,742,500	176,074,900	148,265,000	400,172,904	120,985,000	873,240,304

City of Exeter
2007 Well Pumping Record
Gallons

Month	E-6W	E-9W	E-10W	E-11W	E-12W	E-13W	TOT. GALLONS
JANUARY	0	5,129,500	106,900	33,624,300	6,484,000		45,344,700
FEBRUARY	0	9,597,300	7,775,900	14,485,900	5,014,000		36,873,100
MARCH	0	10,250,200	456,800	37,400,900	5,724,000		53,831,900
APRIL	0	15,741,200	3,658,400	38,025,300	10,024,000		67,448,900
MAY	0	2,745,630	21,672,900	39,125,700	10,134,000		73,678,230
JUNE	6,144,100	26,708,000	31,561,500	36,411,400	9,310,000		110,135,000
JULY	10,938,900	29,568,500	33,806,200	38,243,600	9,795,000		122,352,200
AUGUST	6,272,200	5,112,900	25,412,800	38,497,600	9,532,000	26,479,000	84,827,500
SEPTEMBER	180,900	3,660,300	12,635,300	32,478,200	9,052,000	9,604,000	58,006,700
OCTOBER	0	567,280	2,812,600	25,481,400	9,187,000	16,351,000	38,048,280
NOVEMBER	0	463,000	4,140,600	34,653,800	8,796,000	2,659,000	48,053,400
DECEMBER	0	149,400	804,400	10,267,800	8,990,000	17,996,000	20,211,600
TYD TOTAL	23,536,100	109,693,210	144,844,300	378,695,900	102,042,000	73,089,000	758,811,510

Appendix J

Urban Water Management Plan Adoption Resolution

RESOLUTION NO. _____

RESOLUTION OF THE CITY COUNCIL OF THE CITY OF EXETER, ADOPTING AN URBAN WATER MANAGEMENT PLAN

At a regular meeting of the City Council of the City of Exeter, duly called and held on _____, at_____P.M., it was moved by Council Member_____, and seconded by Council Member_____, and duly carried that the following resolution be adopted:

WHEREAS, pursuant to Senate Bill x7 7 (Steinberg), Water Code Section 10610 et. seq., the City of Exeter has prepared an Urban Water Management Plan; and

WHEREAS, the City Council scheduled a public hearing for _____ to accept testimony regarding the Urban Water Management Plan; and

WHEREAS, the public hearing has been held as scheduled and any and all testimony has been received and considered regarding the Plan, and said Plan has been submitted in draft format to the Department of Water Resources, and minimally modified in accord with comments there from.

NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of Exeter approves and adopts the Urban Water Management Plan, incorporating therein the appointment of the Public Works Director as the City's Program Manager for water shortage activities and authorizing the City Administrator to declare a water shortage should one occur and to implement or recommend thereafter, if necessary, the water shortage measures described in Chapter Eight of said Plan.

Passed and Adopted at a regular meeting of the City Council of the City of Exeter duly called and held on the_____day of_____, by the following vote:

AYES:
Council Member _____

_____

_____

_____

_____

NOES:
Council Member _____

_____

_____

Appendix K

Water Rates

SMALL VALLEY COMMUNITY WATER USER RATES

DINUBA - 100% Metered

$15.740/1,200 cu. ft./mo.
$0.764/100 cu. ft. additional for volumes of 8,800 cu. ft.
$0.506/100 cu. ft. additional for volumes exceeding 8,800 cu. ft.

EXETER - 100% Metered

$18.00 for 1,500 cu. ft./mo. (single family/multifamily per unit)
$1.13/100 cu. ft. additional for volumes in excess of above

REEDLEY - Flat Rate

$12.85/mo. for single family residences
$15.20/mo. for single family residences with a pool
$3.15/100 sq. ft. of living space for sq. ft. residences over 10,000 sq. ft. - additional charge
$11.00/mo./unit for duplexes and triplexes
$9.20/mo./unit for multi-family of four units or more

CORCORAN - Flat Rate and Metered (2,100 vs. 900)

Flat Rate

$19.20/mo. up to 4,000 sq. ft. lot
$21.70/mo. 4,001-5,000 sq. ft. lot
$0.45/100 sq. ft. over 5,000

Metered Rate

$19.20/mo. up to 600 cu. ft.
$0.52/mo./100 cu. ft. in excess of 600

LINDSAY - 100% Metered

Single-Family Residences

$14.68/500 cu. ft.
$0.75/100 cu. ft. in excess of 500 cu. ft.

Multi-Family

$14.11/500 cu. ft.
$0.75/500 cu. ft. in excess of 500 cu. ft.

Commercial

1" meter - $20.63/500 cu. ft. plus $.75/100 cu. ft. for excess
1 ½ " meter - $26.24/500 cu. ft. plus $.75/100 cu. ft. for excess
2" meter - $36.77/500 cu. ft. plus $.75/100 cu. ft. for excess

LEMOORE - 100% Metered

$9.75/700 cu. ft./mo.
$0.65/701 – 2,800 cu. ft.
$0.70/2801 – 5,600 cu. ft.
$0.75/over 5,600 cu. ft.

Appendix L

Sample Water Conservation Ordinance

WATER CONSERVATION ORDINANCE

City of _____ Municipal Code
Public Services Title XX
Water Chapter xx.xx

AN ORDINANCE AMENDING CHAPTER XX OF THE ORDINANCE CODE OF THE CITY OF _____, ESTABLISHING A WATER CONSERVATION MEASURES AND CRITERIA FOR THE CITY'S ENFORCEMENT IN ORDER TO ADEQUATELY PROTECT THE WATER RESOURCES FOR THE CITIZENS OF THE CITY OF_____.

WHEREAS, the State of California deemed water an essential natural resource; and

WHEREAS, the management of urban water demands and efficient use of water shall be actively pursued to protect both the people of the state and their water resources; and

WHEREAS, the management of urban water demands and efficient use of urban water supplies shall be a guiding criterion in public decisions; and

WHEREAS, urban water suppliers shall be required to develop water management plans to actively pursue the efficient use of available supplies; and

WHEREAS, the City has prepared an Urban Water Management Plan for approval by the Department of Water Resources that includes a commitment to prepare a Water Conservation Ordinance to manage the demand and efficient use of urban water;

NOW, THEREFORE, BE IT ORDAINED by the Council of the City of _____:

The following sections of the Ordinance Code are hereby adopted:

Article 1 Water Conservation

13.08.170 Outdoor Water Use
13.08.180 Water Conservation Stage 1
13.08.190 Water Conservation Stage 2
13.08.200 Water Conservation Stage 3
13.08.210 Implementation of Mandatory Compliance Conservation Stages

Article 1: Water Conservation

13.08.170 Outdoor Water Use.

No one within the domestic water system of the City shall knowingly make, cause, use or permit the use of domestic water for residential, commercial, industrial, governmental or any other purpose in a manner contrary to the provisions of this Chapter or in an amount in excess of that use permitted by the water conservation stage in effect pursuant to action taken by the City Administrator in accordance with provision of this Chapter.

13.08.180 Water Conservation Stage 1.

The following restrictions shall apply to all persons year-round unless and until public notification of implementation of Water Conservation Stage 2 or Water Conservation Stage 3 is made. Upon public notification of termination of Water Conservation Stage 3, then Water Conservation Stage 2 shall be in effect. Upon public notification of termination of Water Conservation Stage 2, then Water Conservation Stage 1 shall be in effect.

1. All outdoor irrigation of lawn, gardens, landscaped areas, plants, trees, shrubs or other greenscape areas is prohibited between the hours of ten o'clock (10:00) A.M. and six o'clock (6:00) P.M. from April 1 through September 30 and then from ten o'clock (10:00) A.M. and two o'clock (2:00) P.M. from October 1 through March 31. Irrigation of lawns, gardens, landscaped areas, plants, trees, shrubs or other greenscape areas is permitted at any time if:

    a. A hand held hose equipped with a positive shut-off nozzle is used, or

    b. A drip irrigation system is used.

Exception: Commercial nurseries, and public parks are exempt from Stage 1 irrigation restrictions but will be requested to curtail all nonessential water use.

2. The washing of automobiles, trucks, trailers, boats, airplanes and other types of vehicles, building exteriors, sidewalks, driveways, parking areas, courts, patios and other paved areas is permitted only when using a hand held hose equipped with a positive shut-off nozzle for quick rinses.

3. The operation of any ornamental fountain or other structure making similar use of water is prohibited unless the fountain uses a recycling system.

4. All restaurants are requested to serve water to customers only when specifically requested by customers.

13.08.190 Water Conservation Stage 2.

Upon implementation by the City Manager, a publication of notice, the following restrictions shall apply to all persons: All elements of Water Conservation Stage 1 shall remain in effect for Water Conservation Stage 2 except where overwritten by the following:

1. All outdoor irrigation of lawns, gardens, landscaped areas, plants, trees, shrubs or greenscape areas shall occur only between the hours of twelve o'clock (12:00) midnight to ten o'clock (10:00) A.M. and eight o'clock (8:00) P.M. to twelve o'clock (12:00) midnight on designated days. Dwellings or establishments with even numbered street addresses shall water only on Monday, Wednesday and Friday, subject to the time restrictions set forth above. Dwellings or establishments with odd numbered street addresses shall water only on Tuesdays, Thursdays and Saturdays, subject to the time restrictions set forth above. Anyone may water on Sundays subject to the time restrictions set forth above.

2. The washing of sidewalks, driveways, parking areas, courts, patios, and other paved areas is absolutely prohibited.

13.08.200 Water Conservation Stage 3.

Upon implementation by the City Manager and publication notice, the following restrictions shall apply to all persons: All elements of Water Conservation Stage 2 shall remain in effect for Water Conservation Stage 3 except where overwritten by the following:

1. All outdoor irrigation of lawns, gardens, landscape areas, plants, trees, shrubs or other greenscape areas shall be allowed only between the hours of twelve o'clock (12:00) midnight to seven o'clock (7:00) A.M. and eight o'clock (8:00) P.M. to twelve o'clock (12:00) midnight on designated days. Exception: City Parks may water during the hours of eight o'clock (8:00) A.M. to six o'clock (6:00) P.M. to protect the investment in public parks.

2. The washing of automobiles, trucks, trailers, boats, airplanes and other vehicles not occurring upon immediate premises of car washing and commercial service stations and not in the immediate interest of public health, safety and welfare shall be prohibited.

3. Use of water from fire hydrants shall be limited to fire fighting and/or other activities when necessary to maintain the health, safety and welfare of the customers of the domestic water service area of the City.

4. Commercial nurseries and similar establishments shall water only on designated days and shall use only hand held hose, drip irrigation systems and hand held buckets.

5. The operation of any ornamental fountain or similar structure is prohibited.

13.08.210 Implementation of Mandatory Compliance Conservation Stages.

The City Public Works Department shall monitor the projected supply and demand for water within the City domestic water system and shall recommend to the City Manager the extent of the conservation requirements necessary. In order to ensure the water supply, the City Manager shall implement and/or terminate the particular Water Conservation Stage necessary. Thereafter, the City Manager may order that the appropriate phase or stage of conservation be implemented or terminated in accordance with the applicable provisions of this Chapter. Said notice shall be published in a newspaper of general circulation within the City at least once prior to its effective date. Said Water Conservation Stage shall remain in full force and effect until such time as the City Manager finds or determines that the condition which generated the need for the declaration of the Water Conservation Stage in effect is no longer in existence. At that time, the City Manager shall terminate the prevailing Water Conservation Stage in effect with an effective date identified.

PASSED AND ADOPTED:

_____
_____, Mayor

ATTEST:

_____
_____, City Clerk

APPROVED AS TO FORM
BY CITY ATTORNEY:

_____
_____, City Attorney

Appendix M

Chapter 8 of Exeter Water System Master Plan

CHAPTER EIGHT

WATER CONSERVATION

8.1 Water Conservation

The City currently utilizes 2.2 million gallons per day of water as a yearly (2007) average. Usage during the peak month in 2007 was 3.9 million gallons per day. These usages are slightly more than previously recorded. In 1997, average daily usage was 2.1 million gallons while the peak month usage was 3.3 million gallons.

A lessening of overall California drought conditions could reduce public consciousness regarding the need for water conservation, and could result in an increase in Exeter's water usage without a corresponding increase in a safe water supply. It is important, therefore, that Exeter take continuing effective action to achieve water conservation. Such action will not only guard against a water supply crisis until the supply and storage facilities recommended elsewhere in this report are constructed but will reduce capital costs and operating costs, and consumer rates, for both water and wastewater.

Present average usage per person per day is 212 gallons (2007). This usage per person is far below the typical 275 to 350 gpd when compared to other Central Valley cities. The balance of this report will describe typical water conservation alternatives and estimate the impact such measures would have on average daily consumption per person. The implementation of these measures must, in each instance, be evaluated by the City Council based on cost, community reaction, and long-term effectiveness. Whichever measures are selected, their implementation must be accompanied by an ongoing and effective public education/public participation water conservation program.

8.2 Continued Use of Water Meters

On January 1, 2005, the State of California passed Assembly Bill 2572, a law that requires the installation of water meters on all commercial and residential properties. The bill requires an urban water supplier, beginning on or before January 1, 2010, but subject to certain exceptions, to charge each customer that has a service connection for which a water meter has been installed, based on the actual volume of deliveries, as measured by a water meter. The City of Exeter has metered its water for many years and is, therefore, in compliance with Assembly Bill 2572.

The usage of such meters as a basis for water rates reduces usage by 13 percent to 45 percent per residence, averaging perhaps 30 percent. As an example, the City of San Diego recently underwent this major task and was successful in reducing the overall water usage.

8.3 Xeriscape Landscaping, New Residences

Xeriscape (pronounced zeer-eh-scape) is a combination of the Greek work Xeros, which means dry or arid, and the English word Scape, meaning vista. Xeriscape was popularized in Denver, Colorado in 1978 by a water conservation task force of the Denver Water Department.

There are seven principles founded by Xeriscape and they are as follows:

1. Planning
2. Design
3. Practical Turf Areas (Grass is the thirstiest component of any landscape, so it should be used only where necessary.)
4. Appropriate Plants (A list of Xeriscape plant material is attached in Appendix O.)
5. Appropriate Maintenance
6. Efficient Irrigation
7. Soil Analysis

It is estimated that savings of approximately 40 to 100 gallons per day per capita, during summer months, can be achieved for new residences with Xeriscape landscape design -- reduced turf area and usage of low water usage plants. There is no additional cost to the homeowner; the City incurs review and approval costs. However, homeowner resistance can be anticipated if Xeriscape ordinances are implemented.

8.1 Miscellaneous Water Conservation Measures

Although the per capita daily savings from these measures cannot be accurately quantified, they may be significant. Recommended measures include:

- System leak detection and repair programs (using electronic detection equipment). In addition, adoption of a plumbing retrofit ordinance by City Council would have the possibility of requiring all buildings, prior to the change of ownership, to be certified as having water-conserving plumbing fixtures in place.

- Public information and public education programs (brochures, bill-stuffers, etc. motivating purchase of water saving devices and wise water usage (reference Table 8-1); school room water education programs).

Table 8-1
Typical Household Water Usage

Task	Efficient Use
Shower	2 gallons per minute ultra low flow showerhead, 5 minute shower – 10 gallons
Brushing Teeth	Low flow faucet aerator, wet and brush and rinse – 1/8 gallon
Bath Tub	Minimal water level – 10 gallons
Shaving	Minimal water level – 1 gallon
Washing Dishes	Tap off while washing, sink 1/2 full with a rinse bowl – 5 gallons
Lawn Sprinklers	Water early mornings with minimal runoff
Car Washing	Bucket, hose rinse, shut off nozzle – 10 gallons
Washing Hands	Tap off while washing – 1/4 gallon

Task	Efficient Use
Toilet Flushing	Ultra low flush toilet - 1.6 gallons per flush
Washing Machine	Efficient model with load level set - 25 gallons per load
Automatic Dishwasher	Short Cycle - 12 gallons
Drinking Water	Keep water container in refrigerator - 1/8 gallon

- Water audits - residential, commercial, and industrial

Further information regarding water conservation measure feasibility is available in the reference material for Water Plan, a computer-based water conservation program developed by the State of California in 1989.

Appendix N

NOAA Online Weather Data (Lindsay)

NOWData - NOAA Online Weather Data

LINDSAY (044957)
Monthly Totals/Averages
Precipitation (inches)
Years: 1971-2000

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average	2.44	2.25	2.57	0.90	0.41	0.13	0.00	0.02	0.34	0.66	1.33	1.45	12.51

Official data and data for additional locations and years are available from the Regional Climate Centers and the National Climatic Data Center.

Monthly Results

Page 1 of 1

NOWData - NOAA Online Weather Data

LINDSAY (044957)
Monthly Totals/Averages
Average Temperature (degrees F)
Years: 1971-2000

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average	47.0	51.8	55.8	61.0	67.8	74.6	79.4	78.0	73.0	64.0	52.7	46.0	62.6

Official data and data for additional locations and years are available from the Regional Climate Centers and the National Climatic Data Center.

Appendix O

Climatology (Lindsay)

Lindsay

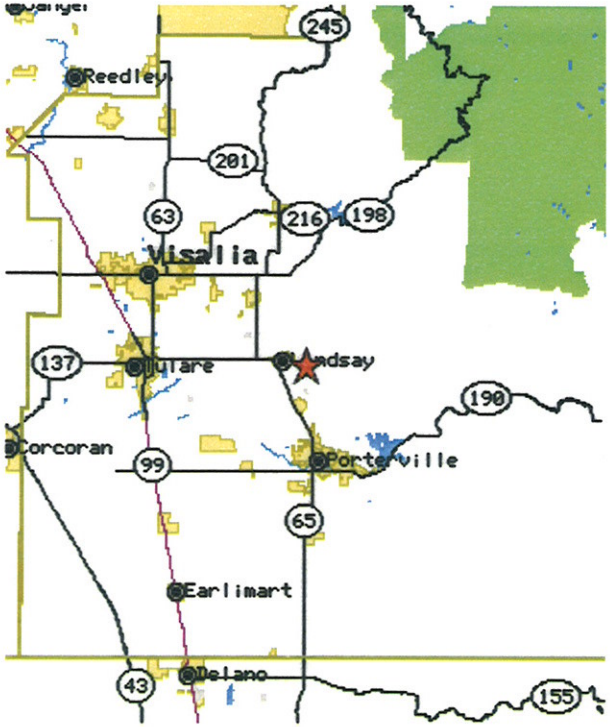
Elev. 420 ft.

30 Year Normals (1971-2000)

Month			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann	Month	
Normal	Maximum		57.8	64.8	69.7	77.3	85.2	92.9	97.6	96.3	91.2	81.3	66.8	57.8	78.2	Maximum	Normal
	Minimum		36.4	38.9	42.2	45.0	50.8	56.8	61.4	59.9	55.2	47.3	39.0	34.4	47.3	Minimum	
	Precipitation		2.44	2.25	2.57	0.90	0.41	0.13	0.01	0.02	0.34	0.67	1.33	1.50	12.57	Precipitation	
	Degree Days	Heating	556	368	291	160	58	3	0	0	10	108	365	586	2505	Heating	Degree Days
		Cooling	0	0	11	44	151	298	450	407	257	86	3	0	1707	Cooling	

Monthly Precipitation

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann	Season	
2009	1.03	1.79	0.32	0.94	-	-	-	-	-	-	-	-	-	2009-10	-
2008	3.07	2.63	0.03	0	0.47	0	0	0	0	0.02	1.70	1.61	9.53	2008-09	-
2007	0.32	1.62	0.88	1.28	0.06	0	0	0.05	0.46	1.43	0.20	1.98	8.28	2007-08	10.32
2006	2.49	0.64	3.18	4.96	0.42	0	0	0	0	0.21	0.01	1.85	13.76	2006-07	6.23
2005	3.60	1.72	2.72	0.56	1.89	0	0	0	0.02	0.37	0.13	1.40	12.41	2005-06	13.61
2004	1.05	2.99	0.89	0.30	0	0	0	0	0	1.85	0.96	2.07	10.11	2004-05	15.37
2003	0.28	2.41	0.72	1.71	1.15	0	0.01	0.05	0.20	0	1.14	2.27	9.94	2003-04	8.90
2002	1.23	0.25	1.36	0.71	0.18	0	0	0	0	0	2.98	2.53	9.24	2002-03	11.78
2001	2.69	2.14	0.11	1.86	0	0	0.25	0	0	0.29	0	3.09	10.43	2001-02	7.36
2000	2.26	5.27	1.84	1.92	0.56	0.31	0	0.01	0	1.39	0.02	0.04	13.62	2000-01	8.26
1999	5.96	1.22	0.44	2.08	0	0	0	0	0.13	0	0.90	0	10.73	1999-00	13.19
1998	3.74	5.84	5.15	2.63	1.33	0.37	0	0	0.05	0.44	0.82	0.97	21.34	1998-99	11.98
1997	4.88	0.35	0.01	0	0	0	0	0	T	0.32	2.88	2.02	10.46	1997-98	24.28
1996	2.73	3.43	1.45	0.71	0.19	0	0	0	0	1.38	2.34	4.60	16.83	1996-97	13.56



Map from tiger.census.gov

Appendix P

State “Review for Completeness” Form

2005 Urban Water Management Plan "Review for Completeness" Form

For DWR Review Staff Use

Coordination with Appropriate Agencies (Water Code § 10620 (d)(1)(2))

Yes

- [ ] Participated in area, regional, watershed or basin wide plan — n/a — Reference & Page Number
  Name of plan _____ Lead Agency _____ — n/a — Reference & Page Number
- [X] Describe the coordination of the plan preparation and anticipated benefits. — Sect 1.5, pg 1-3 — Reference & Page Number

Table 1
Coordination with Appropriate Agencies

Check at least one box on each row	Participated in developing the plan	Commented on the draft	Attended public meetings	Was contacted for assistance	Was sent a copy of the draft plan	Was sent a notice of intention to adopt	Not Involved / No Information
Other water suppliers				x			
Water management agencies				x			
Relevant public agencies				x			
Other							
Other							

Describe resource maximization / import minimization plan (Water Code §10620 (f))

- [X] Describe how water management tools / options maximize resources & minimize need to impor — Sect. 1.3, pg 1-2 — Reference & Page Number

Plan Updated in Years Ending in Five and Zero (Water Code § 10621(a))

- [X] Date updated and adopted plan received n/a (enter date) — Sect 1.2, pg1-2 — Reference & Page Number

City and County Notification and Participation (Water Code § 10621(b))

- [X] Notify any city or county within service area of UWMP of plan review & revision — Sect 1.5, pg1-3 — Reference & Page Number
- [X] Consult and obtain comments from cities and counties within service area — Sect 1.5, pg1-3 & Sect — Reference & Page Number

Service Area Information Water Code § 10631 (a))

- [X] Include current and projected population — Sect 2.4, pg2-4 — Reference & Page Number
- [X] Population projections were based on data from state, regional or local agency — Sect 2.4, pg2-4 — Reference & Page Number

Table 2
Population - Current and Projected

	2005	2010	2015	2020	2025	2030 - opt
Service Area Population	9,862	10,732	12,072	13,578	15,273	17,179

- [X] Describe climate characteristics that affect water management — Sect 2.2, pg 2-1 — Reference & Page Number
- [X] Describe other demographic factors affecting water management — Sect 2.2, pg 2-1 — Reference & Page Number

Table 3
Climate

	January	February	March	April	May	June
Standard Average ETo						
Average Rainfall	2.44	2.25	2.57	0.9	0.41	0.13
Average Temperature	47	51.8	55.8	61	67.8	74.6

Table 3 (continued)
Climate

	July	August	September	October	November	December	Annual
Average ETo							0
Average Rainfall	0	0.02	0.34	0.66	1.33	1.45	12.5
Average Temperature	79.4	78	73	64	52.7	46	62.59166667

Water Sources (Water Code § 10631 (b))

- [X] Identify existing and planned water supply sourc — Ch.3.1, pg3-1 — Reference & Page Number
- [X] Provide current water supply quantities — Ch.3.4, pgs3-8 to 3-10 — Reference & Page Number
- [X] Provide planned water supply quantities — Ch.3.4, pgs3-8 to 3-10 — Reference & Page Number

Table 4 Current and Planned Water Supplies - AFY						
Water Supply Sources	**2005**	**2010**	**2015**	**2020**	**2025**	**2030 - opt**
Water purchased from:						
U.S. Bureau of Reclamation						
Department of Water Resources						
Arcade Water District						
Calleguas Municipal Water District						
Castaic Lake Water Agency						
Central Basin Municipal Water District						
Chino Basin Municipal Water District						
Coastal Municipal Water District						
Contra Costa Water District						
Eastern Municipal Water District						
Foothill Municipal Water District						
Humboldt Bay Municipal Water District						
Inland Empire Utilities Agency						
Joint Regional Water Supply System						
Kern County Water Agency						
Metropolitan Water District of Southern Ca						
Municipal Water District of Orange County						
North of The River Municipal Water Distric						
Placer County Water Agency						
Sacramento County Water Management Di						
San Diego County Water Authority						
San Francisco City of						
San Juan Water District						
San Luis Obispo County						
Santa Clara Valley Water District						
Solano County Water Agency						
Sonoma County Water Agency						
Stockton East Water District						
Tehachapi-Cummings County Water Distri						
Three Valleys Municipal Utility District						
Upper San Gabriel Valley Municipal Water						
Water Facilities Authority						
West Basin Municipal Water District						
Western Municipal Water Dist of Riverside						
Zone 7						
Other Wholesaler 1 (enter agency name)						
Other Wholesaler 2 (enter agency name)						
Other Wholesaler 3 (enter agency name)						
Supplier produced groundwater	2,561	2,741	3,089	3,467	3,901	4,387
Supplier surface diversions						
Transfers in or out						
Exchanges in or out						
Recycled Water (projected use)						
Desalination						
Other						
Other						
Total	**2,561**	**2,741**	**3,089**	**3,467**	**3,901**	**4,387**

If Groundwater identified as existing or planned source		**(Water Code §10631 (b)(1-4))**
X	Has management plan	Attach. E Reference & Page Number
X	Attached management plan (b)(1)	Attach. E Reference & Page Number
X	Description of basin(s) (b)(2)	Sect 3.3, pg 3-2 Reference & Page Number
	Basin is adjudicated	Reference & Page Number
	If adjudicated, attached order or decree (b)(2)	Reference & Page Number
	Quantified amount of legal pumping right (b)(2)	Reference & Page Number

Table 5 Groundwater Pumping Rights - AF Year	
Basin Name	**Pumping Right - AFY**
Total	**0**

	DWR identified, or projected to be, in overdraft (b)(2)	Reference & Page Number
	Plan to eliminate overdraft (b)(2)	Reference & Page Number
X	Analysis of location, amount & sufficiency, last five years (b)(3)	Sect. 5.1.1, pg 5-1 Reference & Page Number
X	Analysis of location & amount projected, 20 years (b)(4)	Sect. 5.1.4, pg 5-4 Reference & Page Number

Table 6 Amount of Groundwater pumped - AFY					
Basin Name (s)	2000	2001	2002	2003	2004
Kaweah Basin	2362	2,476	2,494	2,535	2,644
% of Total Water Supply	100.00%	100.00%	100.00%	100.00%	100.00%

Table 7 Amount of Groundwater projected to be pumped - AFY					
Basin Name(s)	2010	2015	2020	2025	2030 - opt
Kaweah Basin	2,741	3,089	3,467	3,901	4,387
% of Total Water Supply	100.0%	100.0%	100.0%	100.0%	100.0%

Reliability of Supply (Water Code §10631 (c) (1-3))

[X] Describes the reliability of the water supply and vulnerability to seasonal or climatic shortage — Ch 6, pg 6-1 — Reference & Page Number

Table 8 Supply Reliability - AF Year					
		Multiple Dry Water Years			
Average / Normal Water Year	Single Dry Water Year	Year 1	Year 2	Year 3	Year 4
2,561	2,680	2,362	2,476	2,494	
% of Normal	104.6%	92.2%	96.7%	97.4%	0.0%

Table 9 Basis of Water Year Data			
Water Year Type	NOAA	nsumption per capita, not overall consumption due to population increases	
Average Water Year	2005		
Single-Dry Water Year	2006		
Multiple-Dry Water Years	2000-2002		

Appen. O — Reference & Page Number
Appen. O — Reference & Page Number
Appen. O — Reference & Page Number

Water Sources Not Available on a Consistent Basis (Water Code §10631 (c))

[ ] Describe the reliability of the water supply due to seasonal or climatic shortages — Reference & Page Number
[ ] Describe the vulnerability of the water supply to seasonal or climatic shortages — Reference & Page Number
[X] No unreliable sources — Chap.6,pg 6-1 — Reference & Page Number

Table 10 Factors resulting in inconsistency of supply				
Name of supply	Legal	Environ-mental	Water Quality	Climatic

[ ] Describe plans to supplement or replace inconsistent sources with alternative sources or DMMs — Reference & Page Number
[X] No inconsistent sources — Chap.6,pg 6-1 — Reference & Page Number

Transfer or Exchange Opportunities (Water Code §10631 (d))

[ ] Describe short term and long term exchange or transfer opportunities — Reference & Page Number
[X] No transfer opportunities — Sect.5-4,pg5-5 — Reference & Page Number

Table11 Transfer and Exchange Opportunities - AF Year					
Transfer Agency	Transfer or Exchange	Short term	Proposed Quantities	Long term	Proposed Quantities
Total			0		0

Water Use Provisions (Water Code §10631 (e)(1)(2))

[x] Quantify past water use by sector — Attach P — Reference & Page Number
[x] Quantify current water use by sector — Attach P — Reference & Page Number
[x] Project future water use by sector — Attach P — Reference & Page Number

TABLE 12 - Past, Current and Projected Water Deliveries												
	2000				2005				2010			
	metered		unmetered		metered		unmetered		metered		unmetered	
Water Use Sectors	# of accounts	Deliveries AFY	# of accounts	Deliveries AFY	# of accounts	Deliveries AFY	# of accounts	Deliveries AFY	# of accounts	Deliveries AFY	# of accounts	Deliveries AFY
Single family	2,518	1,724	0	0	2,645	1,870	0	0	2,794	2,001	0	0
Multi-family	138	213	0	0	194	230	0	0	238	247	0	0
Commercial	201	378	0	0	272	410	0	0	341	439	0	0
Industrial	19	47	0	0	22	51	0	0	34	55	0	0
Institutional/gov	0	0	0	0	0	0	0	0			0	0
Landscape	0	0	0	0	0	0	0	0			0	0
Agriculture	0	0	0	0	0	0	0	0			0	0
other	0	0	0	0	0	0	0	0			0	0
Total	2,876	2,362	0	0	3,133	2,561	0	0	3,407	2,742	0	0

TABLE12 (continued) - Past, Current and Projected Water Deliveries																
	2015				2020				2025				2030 - opt			
	metered		unmetered		metered		unmetered		metered		unmetered		metered		unmetered	
Water Use Sectors	# of accounts	Deliveries AFY	# of accounts	Deliveries AFY	# of accounts	Deliveries AFY	# of accounts	Deliveries AFY	# of accounts	Deliveries AFY	# of accounts	Deliveries AFY	# of accounts	Deliveries AFY	# of accounts	Deliveries AFY
Single family	3,143	2,251	0	0	3,448	2,531	0	0	3,879	2,847	0	0	4,254	3,203	0	0
Multi-family	268	227	0	0	345	312	0	0	388	351	0	0	491	395	0	0
Commercial	383	493	0	0	474	555	0	0	533	624	0	0	654	702	0	0
Industrial	38	62	0	0	43	69	0	0	48	78	0	0	55	88	0	0
Institutional/gov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Landscape	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Agriculture	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	3,832	3,033	0	0	4,310	3,467	0	0	4,848	3,900	0	0	5,454	4,388	0	0

[ ] Identify and quantify sales to other agencies — Reference & Page Number

[X] No sales to other agencies — Sect.5.4,pg5-5 — Reference & Page Number

Table 13
Sales to Other Agencies - AF Year

Water Distributed	2000	2005	2010	2015	2020	2025	2030 - opt
	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0

[x] Identify and quantify additional water uses — Sect 5.4, 5-5 — Reference & Page Number

Table 14
Additional Water Uses and Losses - AF Year

Water Use	2000	2005	2010	2015	2020	2025	2030 - opt
Saline barriers							
Groundwater recharge							
Conjunctive use							
raw water							
recycled							
other (define)							
Unaccounted-for system losses							
Total	0	0	0	0	0	0	0

Table 15
Total Water Use - AF Year

Water Use	2000	2005	2010	2015	2020	2025	2030 - opt
Total of Tables 12, 13, 14	2,362	2,561	2,742	3,033	3,467	3,900	4,388

2005 Urban Water Management Plan "Review of DMMs for Completeness" Form (Water Code §10631 (f))

(Water Code §10631 (f) & (g), the 2005 Urban Water Management Plan "Review of DMMs for Completeness" Form is found on Sheet 2

Planned Water Supply Projects and Programs, including non-implemented DMMs (Water Code §10631 (g))

[x] No non-implemented / not scheduled DMMs — n/a — Reference & Page Number

[ ] Cost-Benefit includes economic and non-economic factors (environmental, social, health, customer impact, and technological factors) — n/a — Reference & Page Number

[ ] Cost-Benefit analysis includes total benefits and total costs — n/a — Reference & Page Number

[ ] Identifies funding available for Projects with higher per-unit-cost than DMMs — n/a — Reference & Page Number

[ ] Identifies Suppliers' legal authority to implement DMMs, efforts to implement the measures and efforts to identify cost share partners — n/a — Reference & Page Number

Table 16
Evaluation of unit cost of water resulting from non-implemented / non-scheduled DMMs and planned water supply project and programs

Non-implemented & Not Scheduled DMM / Planned Water Supply Projects (Name)	Per-AF Cost ($)

Planned Water Supply Projects and Programs (Water Code §10631 (h))

[X] No future water supply projects or programs

[ ] Detailed description of expected future supply projects & programs — n/a — Reference & Page Number

[ ] Timeline for each proposed project — n/a — Reference & Page Number

[ ] Quantification of each projects normal yield (AFY) — n/a — Reference & Page Number

[ ] Quantification of each projects single dry-year yield (AFY) — n/a — Reference & Page Number

[ ] Quantification of each projects multiple dry-year yield (AFY) — n/a — Reference & Page Number

Table 17
Future Water Supply Projects

Project Name	Projected Start Date	Projected Completion Date	Normal-year AF to agency	Single-dry year yield AF	Multiple-Dry-Year 1 AF	Multiple-Dry-Year 2 AF	Multiple-Dry-Year 3 AF

Opportunities for development of desalinated water (Water Code §10631 (i))

[ ] Describes opportunities for development of desalinated water, including, but not limited to, ocean water, brackish water, and groundwater, as a long-term supply
[x] No opportunities for development of desalinated water

Table 18
Opportunities for desalinated water

Sources of Water	Check if yes
Ocean Water	
Brackish ocean water	
Brackish groundwater	
other	
other	

District is a CUWCC signatory (Water Code § 10631 (j))

Urban suppliers that are California Urban Water Conservation Council members may submit the annual reports identifying water demand management measures currently being implemented, or scheduled for implementation, to satisfy the requirements of subdivisions (f) and (g). The supplier's CUWCC Best Management Practices Report should be attached to the UWMP.

[ ] Agency is a CUWCC member _____ Reference & Page Number
[ ] 2003-04 annual updates are attached to plan _____ Reference & Page Number
[ ] Both annual updates are considered completed by CUWCC website _____ Reference & Page Number

If Supplier receives or projects receiving water from a wholesale supplier (Water Code §10631 (k))

Yes

[ ] Agency receives, or projects receiving, wholesale water _____ Reference & Page Number
[ ] Agency provided written demand projections to wholesaler, 20 years _____ Reference & Page Number

Table 19
Agency demand projections provided to wholesale suppliers - AFY

Wholesaler	2010	2015	2020	2025	2030 - opt
(name 1)					
(name 2)					
(name 3)					

[ ] Wholesaler provided written water availability projections, by source, to agency, 20 years _____ Reference & Page Number
(if agency served by more than one wholesaler, duplicate this table and provide the source availability for each wholesaler)

Table 20
Wholesaler identified & quantified the existing and planned sources of water- AFY

Wholesaler sources	2010	2015	2020	2025	2030 - opt
(source 1)					
(source 2)					
(source 3)					

[ ] Reliability of wholesale supply provided in writing by wholesale agency _____ Reference & Page Number
(if agency served by more than one wholesaler, duplicate this table and provide the source availability for each wholesaler)

Table 21
Wholesale Supply Reliability - % of normal AFY

	Multiple Dry Water Years				
Wholesaler sources	Single Dry	Year 1	Year 2	Year 3	Year 4
(source 1)					
(source 2)					
(source 3)					

Table 22
Factors resulting in inconsistency of wholesaler's supply

Name of supply	Legal	Environment	Water Quality	Climatic

Water Shortage Contingency Plan Section (Water Code § 10632)
Stages of Action (Water Code § 10632 (a))

[x] Provide stages of action Ch 8, pg8-2, Appen L Reference & Page Number
[x] Provide the water supply conditions for each stage Ch 8, pg8-2, Appen L Reference & Page Number
[X] Includes plan for 50 percent supply shortage Ch 8, pg8-2 Reference & Page Number

Table 23
Water Supply Shortage Stages and Conditions
RATIONING STAGES

Stage No.	Water Supply Conditions	% Shortage
1	Minor Shortage Potential	10-20%
2	Moderate Shortage Potential	20-35%
3	Critical Shortage Potential	35-50%

Three-Year Minimum Water Supply (Water Code §10632 (b))

[X] Identifies driest 3-year period — Appen. N — Reference & Page Number

[X] Minimum water supply available by source for the next three years — Table5.1-1, pg 5-2 — Reference & Page Number

Table 24
Three-Year Estimated Minimum Water Supply - AF Year

source**	Normal	Year 1	Year 2	Year 3
Groundwater	2,561	2,362	2,476	2,494
Total	2,561	2,362	2,476	2,494

*Note: If reporting after 2005, please change the column headers (Year 1, 2, & 3) to the appropriate years

Preparation for catastrophic water supply interruption (Water Code §10632 (c))

[X] Provided catastrophic supply interruption plan — CH.6, pg6-1 — Reference & Page Number

Table 25
Preparation Actions for a Catastrophe

Possible Catastrophe	Check if Discussed
Regional power outage	X
Earthquake	X
Pump failure	X
localized water system failure	X

Prohibitions (Water Code § 10632 (d))

[x] List the mandatory prohibitions against specific water use practices during water shortages — Sect8.3, p8-5 — Reference & Page Number

Table 26
Mandatory Prohibitions

Examples of Prohibitions	Stage When Prohibition Becomes Mandatory
Using potable water for street washing	2
Ordinances making water waste illegal	2
Ordinances controlling landscape irrigation	2
Ordinances restricting non - irrigation outdoor water uses	1
Prohibitions on new connections or the incorporation of ne	3
Rationing	3

Consumption Reduction Methods (Water Code § 10632 (e))

[X] List the consumption reduction methods the water supplier will use to reduce water use in the most restrictive stages with up to a 50% reduction. — Ch.8,pg.8-2 — Reference & Page Number

Table 27
Consumption Reduction Methods

Consumption Reduction Methods	Stage When Method Takes Effect	Projected Reduction (%)
Ordinance controlling landscape irrigation	3	50
Prohibition of new connections or incorporation of new areas	3	50

Penalties (Water Code § 10632 (f))

[X] List excessive use penalties or charges for excessive use — Sect.8.4-pg8-6 — Reference & Page Number

Table 28
Penalties and Charges

Penalties or Charges	Stage When Penalty Takes Effect
Penalty for excess use	2
Charge for excess use	2

Revenue and Expenditure Impacts (Water Code § 10632 (g))

X	Describe how actions and conditions impact revenues	sect8.4,pg8-6	Reference & Page Number
X	Describe how actions and conditions impact expenditures	sect8.4,pg8-6	Reference & Page Number
X	Describe measures to overcome the revenue and expenditure impacts	sect8.4,pg8-6	Reference & Page Number

Table 29
Proposed measures to overcome revenue impacts

Names of measures	Check if Discussed
Rate adjustment	x
Development of reserves	x

Table 30
Proposed measures to overcome expenditure impacts

Names of measures	Check if Discussed
Rate adjustment	x

Water Shortage Contingency Ordinance/Resolution (Water Code § 10632 (h))

X	Attach a copy of the draft water shortage contingency resolution or ordinance.	Attach. L	Reference & Page Number

Reduction Measuring Mechanism (Water Code § 10632 (i))

	Provided mechanisms for determining actual reductions	sect8.6,pg8-7	Reference & Page Number

Table 31
Water Use Monitoring Mechanisms

Mechanisms for determining actual reductions	Type data expected (pop-up?)		
Metering		Usage volume	

Recycling Plan Agency Coordination Water Code § 10633

x	Describe the coordination of the recycling plan preparation information to the extent available..	Ch.9,pg 9-1	Reference & Page Number

Table 32
Participating agencies

	participated
Water agencies	
Wastewater agencies	x
Groundwater agencies	
Planning Agencies	x

Wastewater System Description (Water Code § 10633 (a))

x	Describe the wastewater collection and treatment systems in the supplier's service area	sect.9.2,pg 9-2	Reference & Page Number
x	Quantify the volume of wastewater collected and treated		Reference & Page Number

Table 33
Wastewater Collection and Treatment - AF Year

Type of Wastewater	2000	2005	2010	2015	2020	2025	2030 - opt
Wastewater collected & treated in service area	338.6 MG	356.3 MG	391.7 MG	440.6 MG	495.5 MG	557.5 MG	627.0 MG
Volume that meets recycled water standard	338.6 MG	356.3 MG	391.7 MG	440.6 MG	495.5 MG	557.5 MG	627.0 MG

Wastewater Disposal and Recycled Water Uses (Water Code § 10633 (a - d))

x	Describes methods of wastewater disposal	Sect.9.2,p9-2	Reference & Page Number
x	Describe the current type, place and use of recycled water	Sect.9.2,p9-2	Reference & Page Number
	None		Reference & Page Number
x	Describe and quantify potential uses of recycled water	Sect.9.2,p9-2	Reference & Page Number

Table 34 Disposal of wastewater (non-recycled) AF Year							
Method of disposal	Treatment Level	2005	2010	2015	2020	2025	2030 - opt
	Total	0	0	0	0	0	0

Table 35 Recycled Water Uses - Actual and Potential (AFY)							
User type	Treatment Level	2005	2010	2015	2020	2025	2030 - opt
Agriculture							
Landscape							
Wildlife Habitat							
Wetlands							
Industrial							
Groundwater Recharge	secondary	356.3 MG	391.7 MG	440.6 MG	495.5 MG	557.5 MG	627.0 MG
Other (user type)							
Other (user type)							
	Total	0	0	0	0	0	0

[x] Determination of technical and economic feasibility of serving the potential uses — Sect.9.2,p9-2 — Reference & Page Number

Projected Uses of Recycled Water — **(Water Code § 10633 (e))**

[ ] Projected use of recycled water, 20 years — _____ — Reference & Page Number

Table 36 Projected Future Use of Recycled Water in Service Area - AF Year					
	2010	2015	2020	2025	2030 - opt
Projected use of Recycled Water					

[ ] Compare UWMP 2000 projections with UWMP 2005 actual (§ 10633 (e)) — n/a — Reference & Page Number

[x] None — n/a — Reference & Page Number

Table 37 Recycled Water Uses - 2000 Projection compared with 2005 actual - AFY		
User type	2000 Projection for 2005	2005 actual use
Agriculture		
Landscape		
Wildlife Habitat		
Wetlands		
Industrial		
Groundwater Recharge		
Other (user type)		
Other (user type)		
Total	0	0

Plan to Optimize Use of Recycled Water — **(Water Code § 10633 (f))**

[x] Describe actions that might be taken to encourage recycled water uses — Chap 9, 9-2 — Reference & Page Number

[x] Describe projected results of these actions in terms of acre-feet of recycled water used per — Chap 9, 9-2 — Reference & Page Number

Table 38 Methods to Encourage Recycled Water Use					
	AF of use projected to result from this action				
Actions	2010	2015	2020	2025	2030 - opt
Total	0	0	0	0	0

[X] Provide a recycled water use optimization plan which includes actions to facilitate the use of recycled water (dual distribution systems, promote recirculating uses) — Chap 9, 9-2 — Reference & Page Number

Water quality impacts on availability of supply — **(Water Code §10634)**

[x] Discusses water quality impacts (by source) upon water management strategies and supply reli — Sect 4.2, pg 4-4 — Reference & Page Number

[ ] No water quality impacts projected — _____

Table 39 Current & projected water supply changes due to water quality - percentage						
water source	2005	2010	2015	2020	2025	2030 - opt
groundwater	90	100	100	100	100	100

Supply and Demand Comparison to 20 Years **(Water Code § 10635 (a))**

[x] Compare the projected normal water supply to projected normal water use over the next 20 years, in 5-year increments.

Attach P Reference & Page Number

Table 40 Projected Normal Water Supply - AF Year					
(from table 4)	2010	2015	2020	2025	2030 - opt
Supply	2,741	3,089	3,467	3,901	4,387
% of year 2005	107%	121%	135%	152%	171%

Table 41 Projected Normal Water Demand - AF Year					
(from table 15)	2010	2015	2020	2025	2030 - opt
Demand	2,742	3,033	3,467	3,900	4,388
% of year 2005	107%	118%	135%	152%	171%

Table 42 Projected Supply and Demand Comparison - AF Year					
	2010	2015	2020	2025	2030 - opt
Supply totals	2,741	3,089	3,467	3,901	4,387
Demand totals	2,742	3,033	3,467	3,900	4,388
Difference	(1)	56	0	1	(1)
Difference as % of Supply	0%	2%	0%	0%	0%
Difference as % of Demand	0%	2%	0%	0%	0%

Supply and Demand Comparison: Single-dry Year Scenario **(Water Code § 10635 (a))**

[ ] Compare the projected single-dry year water supply to projected single-dry year water use over the next 20 years, in 5-year increments. Reference & Page Number

Table 43 Projected single dry year Water Supply - AF Year					
	2010	2015	2020	2025	2030 - opt
Supply	2,741	3,089	3,467	3,901	4,387
% of projected normal					

Table 44 Projected single dry year Water Demand - AF Year					
	2010	2015	2020	2025	2030 - opt
Demand					
% of projected normal					

Table 45 Projected single dry year Supply and Demand Comparison - AF Year					
	2010	2015	2020	2025	2030 - opt
Supply totals	2,741	3,089	3,467	3,901	4,387
Demand totals	0	0	0	0	0
Difference	2,741	3,089	3,467	3,901	4,387
Difference as % of Supply	100.0%	100.0%	100.0%	100.0%	100.0%
Difference as % of Demand					

Supply and Demand Comparison: Multiple-dry Year Scenario **(Water Code § 10635 (a))**

[ ] Project a multiple-dry year period (as identified in Table 9) occurring between 2006-2010 and compare projected supply and demand during those years Reference & Page Number

Table 46 Projected supply during multiple dry year period ending in 2010 - AF Year					
	2006	2007	2008	2009	2010
Supply					
% of projected normal					

Table 47 Projected demand multiple dry year period ending in 2010 - AFY					
	2006	2007	2008	2009	2010
Demand					
% of projected normal	0.0%	0.0%	0.0%	0.0%	0.0%

Table 48 Projected Supply and Demand Comparison during multiple dry year period ending in 2010- AF Year					
	2006	2007	2008	2009	2010
Supply totals	0	0	0	0	0
Demand totals	0	0	0	0	0
Difference	0	0	0	0	0
Difference as % of Supply					
Difference as % of Demand					

☐ Project a multiple-dry year period (as identified in Table 9) occurring between 2011-2015 and compare projected supply and demand during those years _____ Reference & Page Number

Table 49 Projected supply during multiple dry year period ending in 2015 - AF Year					
	2011	2012	2013	2014	2015
Supply					
% of projected normal					

Table 50 Projected demand multiple dry year period ending in 2015 - AFY					
	2011	2012	2013	2014	2015
Demand					
% of projected normal					

Table 51 Projected Supply and Demand Comparison during multiple dry year period ending in 2015- AF Year					
	2011	2012	2013	2014	2015
Supply totals	0	0	0	0	0
Demand totals	0	0	0	0	0
Difference	0	0	0	0	0
Difference as % of Supply					
Difference as % of Demand					

☐ Project a multiple-dry year period (as identified in Table 9) occurring between 2016-2020 and compare projected supply and demand during those years _____ Reference & Page Number

Table 52 Projected supply during multiple dry year period ending in 2020 - AF Year					
	2016	2017	2018	2019	2020
Supply					
% of projected normal					

Table 53 Projected demand multiple dry year period ending in 2020 - AFY					
	2016	2017	2018	2019	2020
Demand					
% of projected normal					

Table 54 Projected Supply and Demand Comparison during multiple dry year period ending in 2020- AF Year					
	2016	2017	2018	2019	2020
Supply totals	0	0	0	0	0
Demand totals	0	0	0	0	0
Difference	0	0	0	0	0
Difference as % of Supply					
Difference as % of Demand					

☐ Project a multiple-dry year period (as identified in Table 9) occurring between 2021-2025 and compare projected supply and demand during those years _____ Reference & Page Number

Table 55 Projected supply during multiple dry year period ending in 2025 - AF Year					
	2021	2022	2023	2024	2025
Supply					
% of projected normal					

Table 56 Projected demand multiple dry year period ending in 2025 - AFY					
	2021	2022	2023	2024	2025
Demand					
% of projected normal					

Table 57 Projected Supply and Demand Comparison during multiple dry year period ending in 2025- AF Year					
	2021	2022	2023	2024	2025
Supply totals	0	0	0	0	0
Demand totals	0	0	0	0	0
Difference	0	0	0	0	0
Difference as % of Supply					
Difference as % of Demand					

Provision of Water Service Reliability section to cities/counties within service area		(Water Code § 10635(b))	
[x]	Provided Water Service Reliability section of UWMP to cities and counties within which it provides water supplies within 60 days of UWMP submission to DWR	Ch1,pg1-2	Reference & Page Number

Does the Plan Include Public Participation and Plan Adoption		(Water Code § 10642)	
[x]	Attach a copy of adoption resolution	Appen J	Reference & Page Number
[x]	Encourage involvement of social, cultural & economic community groups	Ch1,pg1-2	Reference & Page Number
[x]	Plan available for public inspection	Ch1,pg1-2	Reference & Page Number
[x]	Provide proof of public hearing	Ch1,pg1-2	Reference & Page Number
[x]	Provided meeting notice to local governments		Reference & Page Number

Review of implementation of 2000 UWMP		(Water Code § 10643)	
[ ]	Reviewed implementation plan and schedule of 2000 UWMP	n/a	Reference & Page Number
[ ]	Implemented in accordance with the schedule set forth in plan	n/a	Reference & Page Number
[x]	2000 UWMP not required	Ch1,pg1-2	Reference & Page Number

Provision of 2005 UWMP to local governments		(Water Code § 10644 (a))	
[x]	Provide 2005 UWMP to DWR, and cities and counties within 30 days of adoption	Ch1,pg1-2	Reference & Page Number

Does the plan or correspondence accompanying it show where it is available for public review		(Water Code § 10645)	
[x]	Does UWMP or correspondence accompanying it show where it is available for public review	Ch1,pg1-2	Reference & Page Number

Appendix Q

Adopted Resolution

RESOLUTION NO. 2010-18

RESOLUTION OF THE CITY COUNCIL OF THE CITY OF EXETER,
ADOPTING AN URBAN WATER MANAGEMENT PLAN

At a regular meeting of the City Council of the City of Exeter, duly called and held on June 8, 2010, at 7:00P.M., it was moved by Council Member Allwardt and seconded by Council Member Boyce and duly carried that the following resolution be adopted:

WHEREAS, pursuant to Assembly Bill 797, Water Code Section 10610 et. seq., the City of Exeter has prepared an Urban Water Management Plan; and

WHEREAS, the City Council scheduled a public hearing for June 8, 2010 to accept testimony regarding the Urban Water Management Plan; and

WHEREAS, the public hearing has been held as scheduled and any and all testimony has been received and considered regarding the Plan, and said Plan has been submitted in draft format to the Department of Water Resources, and minimally modified in accord with comments there from.

NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of Exeter approves and adopts the Urban Water Management Plan, incorporating therein the appointment of the Public Works Director as the City's Program Manager for water shortage activities and authorizing the City Administrator to declare a water shortage should one occur and to implement or recommend thereafter, if necessary, the water shortage measures described in Chapter Eight of said Plan.

Passed and Adopted at a regular meeting of the City Council of the City of Exeter duly called and held on the 8th day of June, 2010 by the following vote:

AYES:	Allwardt, Boyce, Macaulay. Ooley, Stearns
NOES:	None
ABSTAIN:	None
ABSENT:	None

LEON OOLEY
MAYOR

FELIX ORTIZ
ACTING CITY CLERK

Appendix R

Response to States Comments – Exeter 2005 UWMP

2005 Urban Water Management Plan "Review of DMMs for Completeness" Form

City of Exeter

DMM 1 - Water Survey Programs for Single-Family and Multi-Family Residential Customers (10631 f(1)(A))

Implementation **(Section 10631 (f))**

[x] Describe demand management measure currently being implemented or scheduled for implementation (10631 (f) (1)(2)) — pg.7-2 — Reference & Page Number

Year program started _____ or Year program scheduled to start 2010

[x] Describes steps necessary to implement measure — pg.7-2 — Reference & Page Number

Table A1					
Actual	2001	2002	2003	2004	2005
# of single family surveys					
# of multifamily surveys					
actual expenditures - $					
actual water savings - AFY					

Table A2					
Planned	2006	2007	2008	2009	2010
# of single family surveys					
# of multifamily surveys					
projected expenditures - $					
projected water savings - AFY					

COMMENT

[x] Describe the methods, if any, used to evaluate the effectiveness of this demand management measure (10631 (f)(3)) — pg.7-2 — Reference & Page Number

[x] Provide estimates, if available, of existing conservation savings on water use and the effect of such savings on the supplier's ability to further reduce demand (10631(f)(4)) — pg.7-2 — Reference & Page Number

Provided an evaluation for this DMM if it is not implemented **(Section 10631 (g))**

[ ] Evaluate legal authority (10631 (g)(4))

[ ] Evaluate economic and non-economic factors (10631 (g)(1))

[ ] Evaluate environmental, social, health factors (10631 (g)(1))

[ ] Evaluate customer impact & technological factors (10631 (g)(1))

Table A3 - 10631 (g)(2)	
Cost Effectiveness Summary	
Total Costs	
Total Benefits	
Discount Rate	
Time Horizon	
Cost of Water ($ per AF)	
Water Savings (AFY)	

☐ Describe efforts to work with other relevant agencies to ensure implementation of the measure and to share the cost of implementation (10631 (g)(4))

☐ Describe funding available to implement any planned water supply project that would provide water at a higher unit cost (10631 (g)(3) & (h))

If Another Agency Implementing

☐ If another Agency is implementing (10631 (g)(4))

Agency Name

DMM 2 - Residential Plumbing Retrofit (10631 (f)(1)(B))

Implementation **(Section 10631 (f) & (h))**

☒ Describe demand management measure currently being implemented or scheduled for implementation (10631 (f) (1)(2)) — pg.7-2 Reference & Page Number

Year program started _____ or Year program scheduled to start 2010

☒ Describes steps necessary to implement measure — pg7-2 Reference & Page Number

# of pre-1992 SF accounts 1958 # of pre-1992 MF accounts 96

Table B1					
Actual	1992-2001	2002	2003	2004	2005
# of single family devices					
# of multi-family devices					
actual expenditures - $					
actual water savings - AFY					

Table B2					
Planned	2006	2007	2008	2009	2010
# of single family devices					
# of multi-family devices					
projected expenditures - $					
projected water savings - AFY					

COMMENT

☒ Describe the methods, if any, used to evaluate the effectiveness of this demand management measure (10631 (f)(3)) — pg.7-2 Reference & Page Number

☒ Provide estimates, if available, of existing conservation savings on water use and the effect — pg.7-2 Reference & Page Number

of such savings on the supplier's ability to further reduce demand (10631(f)(4))

Provided an evaluation for this DMM if it is not implemented **(Section 10631 (g))**

- ☐ Evaluate legal authority (10631 (g)(4))
- ☐ Evaluate economic and non-economic factors (10631 (g)(1))
- ☐ Evaluate environmental, social, health factors (10631 (g)(1))
- ☐ Evaluate customer impact & technological factors (10631 (g)(1))

Table B3 - 10631 (g)(2)	
Cost Effectiveness Summary	
Total Costs	
Total Benefits	
Discount Rate	
Time Horizon	
Cost of Water	
Water Savings (AFY)	

- ☐ Describe efforts to work with other relevant agencies to ensure implementation of the measure and to share the cost of implementation (10631 (g)(4))
- ☐ Describe funding available to implement any planned water supply project that would provide water at a higher unit cost (10631 (g)(3) & (h))

If Another Agency Implementing

- ☐ If another Agency is implementing (10631 (g)(4))

Agency Name

DMM 3 - System Water Audits, Leak Detection and Repair (10631 (f)(1)(C))

Implementation **(Section 10631 (f) & (h))**

- x Describe demand management measure currently being implemented or scheduled for implementation (10631 (f) (1)(2)) — pg. 7-2 — Reference & Page Number

Year program started: prior to 1970 or Year program scheduled to start:

- x Describes steps necessary to implement measure — pg. 7-2 — Reference & Page Number

Year of last complete audit: n/a Year of next complete audit: 2012

Table C1					
Actual	2001	2002	2003	2004	2005
% of unaccounted water					
miles of mains surveyed					
miles of lines repaired					
actual expenditures - $					
actual water savings - AFY					

COMMENT
An audit/inspection of the water wells are conducted weekly for operations. The water usage is informally reviewed

Table C2					
Planned	2006	2007	2008	2009	2010
% of unaccounted water					
miles of mains surveyed					
miles of lines repaired					
projected expenditures - $					
projected water savings - AFY					

informally reviewed on an annual basis and the City immediately responds to any reports of leaks or drops in water production/service

x Describe the methods, if any, used to evaluate the effectiveness of this demand management measure (10631 (f)(3)) — pg. 7-2 — Reference & Page Number

x Provide estimates, if available, of existing conservation savings on water use and the effect of such savings on the supplier's ability to further reduce demand (10631(f)(4)) — n/a — Reference & Page Number

Provided an evaluation for this DMM if it is not implemented **(Section 10631 (g))**

- ☐ Evaluate legal authority (10631 (g)(4))
- ☐ Evaluate economic and non-economic factors (10631 (g)(1))
- ☐ Evaluate environmental, social, health factors (10631 (g)(1))
- ☐ Evaluate customer impact & technological factors (10631 (g)(1))

Table C3 - 10631 (g)(2)	
Cost Effectiveness Summary	
Total Costs	
Total Benefits	
Discount Rate	
Time Horizon	
Cost of Water	
Water Savings (AFY)	

- ☐ Describe efforts to work with other relevant agencies to ensure implementation of the measure and to share the cost of implementation (10631 (g)(4))
- ☐ Describe funding available to implement any planned water supply project that would provide water at a higher unit cost (10631 (g)(3) & (h))

If Another Agency Implementing

☐ If another Agency is implementing (10631 (g)(4))

Agency Name

DMM 4 - Metering with Commodity Rates (10631 (f)(1)(D))

Implementation **(Section 10631 (f) & (h))**

x Describe demand management measure currently being implemented or scheduled for implementation (10631 (f) (1)(2)) — p 7-3 — Reference & Page Number

Year program started: prior to 1980 or Year program scheduled to start:

x Describes steps necessary to implement measure — p 5-3 — Reference & Page Number

Total number of accounts: 3276 — # of accounts w/o commodity rates: 0

Table D1					
Actual	2001	2002	2003	2004	2005
# of unmetered accounts					
# of retrofit meters installed					
# of accounts w/o commodity rates					
actual expenditures - $					
actual water savings - AFY					

Table D2					
Planned	2006	2007	2008	2009	2010
# of unmetered accounts					
# of retrofit meters installed					
# of accounts w/o commodity rates					
projected expenditures - $					
projected water savings - AFY					

COMMENT

Currently all the accounts in the City are metered. All new construction in required to be metered. This program has been in effect for several decades. Available data is evaluated annually to determine the need for meter inspections and evaluations.

x Describe the methods, if any, used to evaluate the effectiveness of this demand management measure (10631 (f)(3)) — p 7-3 — Reference & Page Number

x Provide estimates, if available, of existing conservation savings on water use and the effect of such savings on the supplier's ability to further reduce demand (10631(f)(4)) — n/a — Reference & Page Number

Provided an evaluation for this DMM if it is not implemented **(Section 10631 (g))**

- ☐ Evaluate legal authority (10631 (g)(4))
- ☐ Evaluate economic and non-economic factors (10631 (g)(1))
- ☐ Evaluate environmental, social, health factors (10631 (g)(1))
- ☐ Evaluate customer impact & technological factors (10631 (g)(1))

Table D3 - 10631 (g)(2)	
Cost Effectiveness Summary	
Total Costs	
Total Benefits	
Discount Rate	
Time Horizon	
Cost of Water	
Water Savings (AFY)	

- ☐ Describe efforts to work with other relevant agencies to ensure implementation of the measure and to share the cost of implementation (10631 (g)(4))
- ☐ Describe funding available to implement any planned water supply project that would provide water at a higher unit cost (10631 (g)(3) & (h))

If Another Agency Implementing

☐	If another Agency is implementing (10631 (g)(4))	**Agency Name**

DMM 5 - Large Landscape Conservation Programs and Incentives (10631 (f)(1)(E))

Implementation **(Section 10631 (f) & (h))**

x	Describe demand management measure currently being implemented or scheduled for implementation (10631 (f) (1)(2))	pg.7-3	Reference & Page Number
	Year program started _____ or Year program scheduled to start 2010		
x	Describes steps necessary to implement measure	pg.7-3, p 5-3	Reference & Page Number

# of landscape accounts	0	# of landscape accounts with budgets	0
# of CII accounts	0	# of CII accounts w/ landscape surveys	0

(CII, commercial, industrial, institutional mixed use meters)

Table E1					
Actual	2001	2002	2003	2004	2005
# of budgets developed					
# of surveys completed					
# of follow-up visits					
actual expenditures - $					
actual water savings - AFY					

Table E2					
Planned	2006	2007	2008	2009	2010
# of budgets developed					
# of surveys completed					
# of follow-up visits					
projected expenditures - $					
projected water savings - AFY					

COMMENT

The City does not consider itself large enough to warrant separate accounts for landscaping. Currently there are only 19 industrial accounts. In leiu of special accounts/ meters, the City currently implements the landscpaing ordinance.

x	Describe the methods, if any, used to evaluate the effectiveness of this demand management measure (10631 (f)(3))	pg.7-3	Reference & Page Number
x	Provide estimates, if available, of existing conservation savings on water use and the effect of such savings on the supplier's ability to further reduce demand (10631(f)(4))	pg.7-3	Reference & Page Number

Provided an evaluation for this DMM if it is not implemented **(Section 10631 (g))**

- ☐ Evaluate legal authority (10631 (g)(4))
- ☐ Evaluate economic and non-economic factors (10631 (g)(1))
- ☐ Evaluate environmental, social, health factors (10631 (g)(1))
- ☐ Evaluate customer impact & technological factors (10631 (g)(1))

Table E3 - 10631 (g)(2)	
Cost Effectiveness Summary	
Total Costs	
Total Benefits	
Discount Rate	
Time Horizon	
Cost of Water	
Water Savings (AFY)	

- ☐ Describe efforts to work with other relevant agencies to ensure implementation of the measure and to share the cost of implementation (10631 (g)(4))
- ☐ Describe funding available to implement any planned water supply project that would provide water at a higher unit cost (10631 (g)(3) & (h))

If Another Agency Implementing

- ☐ If another Agency is implementing (10631 (g)(4))

Agency Name

DMM 6 - High-Efficiency Washing Machine Rebate Programs (10631 (f)(1)(F))

Implementation **(Section 10631 (f) & (h))**

- ☒ Describe demand management measure currently being implemented or scheduled for implementation (10631 (f) (1)(2)) — pg 7-3 — Reference & Page Number

Year program started: 2008 or Year program scheduled to start:

Other agencies offer rebates: SCE Cost-effectiveness calcs attached:

- ☒ Describes steps necessary to implement measure — pg 7-3 — Reference & Page Number

Table F1					
Actual	2001	2002	2003	2004	2005
$ per rebate					
# of rebates paid					
actual expenditures - $					
actual water savings - AFY					

Table F2					
Planned	2006	2007	2008	2009	2010
$ per rebate					
# of rebates paid					
projected expenditures - $					

COMMENT
SCE programs change annually and through a third party. The management of these programs are done by SCE and not the City.

projected water savings - AFY						

[x] Describe the methods, if any, used to evaluate the effectiveness of this demand management measure (10631 (f)(3)) — n/a — Reference & Page Number

[x] Provide estimates, if available, of existing conservation savings on water use and the effect of such savings on the supplier's ability to further reduce demand (10631(f)(4)) — n/a — Reference & Page Number

Provided an evaluation for this DMM if it is not implemented **(Section 10631 (g))**

[ ] Evaluate legal authority (10631 (g)(4))

[ ] Evaluate economic and non-economic factors (10631 (g)(1))

[ ] Evaluate environmental, social, health factors (10631 (g)(1))

[ ] Evaluate customer impact & technological factors (10631 (g)(1))

Table F3 - 10631 (g)(2)	
Cost Effectiveness Summary	
Total Costs	
Total Benefits	
Discount Rate	
Time Horizon	
Cost of Water	
Water Savings (AFY)	

[ ] Describe efforts to work with other relevant agencies to ensure implementation of the measure and to share the cost of implementation (10631 (g)(4))

[ ] Describe funding available to implement any planned water supply project that would provide water at a higher unit cost (10631 (g)(3) & (h))

If Another Agency Implementing

[x] If another Agency is implementing (10631 (g)(4))

Agency Name
Southern California Edison

DMM 7 - Public Information Programs (10631 (f)(1)(G))

Implementation **(Section 10631 (f))**

[x] Describe demand management measure currently being implemented or scheduled for implementation (10631 (f) (1)(2)) — pg.7-3 — Reference & Page Number

Year program started _____ or Year program scheduled to start 2010

[x] Describes steps necessary to implement measure — pg.7-3 — Reference & Page Number

Table G1						COMMENT
Actual	2001	2002	2003	2004	2005	
a. paid advertising						
b. Public Service Announcement						
c. Bill Inserts / Newsletters / Brochures						

d. Bill showing water usage in comparison to previous year's usage					
e. Demonstration Gardens					
f. Special Events, Media Events					
g. Speaker's Bureau					
h. Program to coordinate with other government agencies, industry and public interest groups and media					
actual expenditures - $					

Table G2					
Planned	2006	2007	2008	2009	2010
a. paid advertising					
b. Public Service Announcement					
c. Bill Inserts / Newsletters / Brochures					
d. Bill showing water usage in comparison to previous year's usage					
e. Demonstration Gardens					
f. Special Events, Media Events					
g. Speaker's Bureau					
h. Program to coordinate with other government agencies, industry and public interest groups and media					
Projected expenditures - $					

[x] Describe the methods, if any, used to evaluate the effectiveness of this demand management measure (10631 (f)(3))

pg.7-3 Reference & Page Number

Provided an evaluation for this DMM if it is not implemented (Section 10631 (g))

- [ ] Evaluate legal authority (10631 (g)(4))
- [ ] Evaluate economic and non-economic factors (10631 (g)(1))
- [ ] Evaluate environmental, social, health factors (10631 (g)(1))
- [ ] Evaluate customer impact & technological factors (10631 (g)(1))

Table G3 - 10631 (g)(2)	
Cost Effectiveness Summary	
Total Costs	
Total Benefits	
Discount Rate	
Time Horizon	
Cost of Water	
Water Savings (AFY)	

- [ ] Describe efforts to work with other relevant agencies to ensure implementation of the measure and to share the cost of implementation (10631 (g)(4))
- [ ] Describe funding available to implement any planned water supply project that would provide water at a higher unit cost (10631 (g)(3) & (h))

If Another Agency Implementing

☐ If another Agency is implementing (10631 (g)(4))

Agency Name

DMM 8 - School Education Programs (10631 (f)(1)(H))

Implementation **(Section 10631 (f) & (h))**

☒ Describe demand management measure currently being implemented or scheduled for implementation (10631 (f) (1)(2)) — pg7-4 Reference & Page Number

Year program started _____ or Year program scheduled to start 2012

☒ Describes steps necessary to implement measure — pg7-4 Reference & Page Number

Table H1		No. of class presentations					COMMENT
Actual	# of classes	2001	2002	2003	2004	2005	
Grades K-3rd							
Grades 4th-6th							
Grades 7th-8th							
High School							
actual expenditures - $							

Table H2		No. of class presentations				
Actual	# of classes	2006	2007	2008	2009	2010
Grades K-3rd						
Grades 4th-6th						
Grades 7th-8th						
High School						
projected expenditures - $						

☒ Describe the methods, if any, used to evaluate the effectiveness of this demand management measure (10631 (f)(3)) — pg7-4 Reference & Page Number

☒ Did your agency's material meet state education framework requirements? — pg7-4 Reference & Page Number

Provided an evaluation for this DMM if it is not implemented **(Section 10631 (g))**

☐ Evaluate legal authority (10631 (g)(4))

☐ Evaluate economic and non-economic factors (10631 (g)(1))

☐ Evaluate environmental, social, health factors (10631 (g)(1))

Table H3 - 10631 (g)(2)	
Cost Effectiveness Summary	
Total Costs	
Total Benefits	
Discount Rate	
Time Horizon	

☐	Evaluate customer impact & technological factors (10631 (g)(1))	**Cost of Water**	
		Water Savings (AFY)	

☐ Describe efforts to work with other relevant agencies to ensure implementation of the measure and to share the cost of implementation (10631 (g)(4))

☐ Describe funding available to implement any planned water supply project that would provide water at a higher unit cost (10631 (g)(3) & (h))

If Another Agency Implementing

☐ If another Agency is implementing (10631 (g)(4))

Agency Name

DMM 9 - Conservation Programs for Commercial, Industrial and Institutional (10631 (f)(1)(I))

Implementation **(Section 10631 (f) & (h))**

☒ Describe demand management measure currently being implemented or scheduled for implementation (10631 (f) (1)(2)) — pg7-4 — Reference & Page Number

Year program started _____ or Year program scheduled to start 2012

☒ Describes steps necessary to implement measure — Pg 5-3 — Reference & Page Number

# of Commercial accounts 269 # of Industrial accounts 19 # of Institutional accounts 2988

Table I1					
Actual	2001	2002	2003	2004	2005
# of surveys completed					
Were incentives provided?					
# of follow-up visits					
actual expenditures - $					
actual water savings - AFY					

Table I2					
Planned	2006	2007	2008	2009	2010
# of surveys completed					
Were incentives provided?					
# of follow-up visits					
projected expenditures - $					
projected water savings - AFY					

COMMENT

☒ Describe the methods, if any, used to evaluate the effectiveness of this demand management measure (10631 (f)(3)) — pg7-4 — Reference & Page Number

☒ Provide estimates, if available, of existing conservation savings on water use and the effect — n/a — Reference & Page Number

of such savings on the supplier's ability to further reduce demand (10631(f)(4))

Provided an evaluation for this DMM if it is not implemented **(Section 10631 (g))**

- ☐ Evaluate legal authority (10631 (g)(4))
- ☐ Evaluate economic and non-economic factors (10631 (g)(1))
- ☐ Evaluate environmental, social, health factors (10631 (g)(1))
- ☐ Evaluate customer impact & technological factors (10631 (g)(1))

Table I3 - 10631 (g)(2)	
Cost Effectiveness Summary	
Total Costs	
Total Benefits	
Discount Rate	
Time Horizon	
Cost of Water	
Water Savings (AFY)	

- ☐ Describe efforts to work with other relevant agencies to ensure implementation of the measure and to share the cost of implementation (10631 (g)(4))
- ☐ Describe funding available to implement any planned water supply project that would provide water at a higher unit cost (10631 (g)(3) & (h))

If Another Agency Implementing

- ☐ If another Agency is implementing (10631 (g)(4))

Agency Name

Conservation Programs for Commercial, Industrial & Institutional - Toilet Replacement (10631 (f)(1)(i))

(this data is part of the Council Annual Report but is not specifically requested in the UWMP Act)

Implementation **(Section 10631 (f) & (h))**

- ☐ Describe demand management measure currently being implemented or scheduled for implementation (10631 (f) (1)(2)) _____ Reference & Page Number

Year program started _____ or Year program scheduled to start _____

- ☐ Describes steps necessary to implement measure _____ Reference & Page Number

Table I4					
Actual	2001	2002	2003	2004	2005
# of commercial replacements					
# of industrial replacements					
# of institutional replacements					
actual expenditures - $					
actual water savings - AFY					

Table I5					
Planned	2006	2007	2008	2009	2010

COMMENT

# of commercial replacements					
# of industrial replacements					
# of institutional replacements					
projected expenditures - $					
projected water savings - AFY					

☐ Describe the methods, if any, used to evaluate the effectiveness of this demand management measure (10631 (f)(3)) _____ Reference & Page Number

☐ Provide estimates, if available, of existing conservation savings on water use and the effect of such savings on the supplier's ability to further reduce demand (10631(f)(4)) _____ Reference & Page Number

Provided an evaluation for this DMM if it is not implemented **(Section 10631 (g))**

☐ Evaluate legal authority (10631 (g)(4))

☐ Evaluate economic and non-economic factors (10631 (g)(1))

☐ Evaluate environmental, social, health factors (10631 (g)(1))

☐ Evaluate customer impact & technological factors (10631 (g)(1))

Table I6 - 10631 (g)(2)	
Cost Effectiveness Summary	
Total Costs	
Total Benefits	
Discount Rate	
Time Horizon	
Cost of Water	
Water Savings (AFY)	

☐ Describe efforts to work with other relevant agencies to ensure implementation of the measure and to share the cost of implementation (10631 (g)(4))

☐ Describe funding available to implement any planned water supply project that would provide water at a higher unit cost (10631 (g)(3) & (h))

If Another Agency Implementing

☐ If another Agency is implementing (10631 (g)(4))

Agency Name

DMM 10 - Wholesale Agency Programs (10631 (f)(1)(J))

☒ Not a wholesale agency

Implementation **(Section 10631 (f) & (h))**

☐ Describe demand management measure currently being implemented or scheduled for implementation (10631 (f) (1)(2)) _____ Reference & Page Number

Year program started _____ or Year program scheduled to start _____

# of suppliers you serve _____

☐ Describes steps necessary to implement measure _____ Reference & Page Number

Table J1	Number of agencies assisted				
program activities	2001	2002	2003	2004	2005
Water Surveys					
Residential Retrofit					
System Audits					
Metering-Commodity Rates					
Landscape Programs					
Washing Machines					
Public Information					
School Education					
CII WC					
CII ULF					
Water Waste					
Pricing					
WC Coordinator					
Water Waste					
UFLT Replacement					
actual expenditures - $					

COMMENT

Table J2	Number of agencies to be assisted				
program activities	2006	2007	2008	2009	2010
Water Surveys					
Residential Retrofit					
System Audits					
Metering-Commodity Rates					
Landscape Programs					
Washing Machines					
Public Information					
School Education					
CII WC					
CII ULF					
Water Waste					
Pricing					
WC Coordinator					
Water Waste					
UFLT Replacement					
projected expenditures - $					

☐ Describe the methods, if any, used to evaluate the effectiveness of this demand management measure (10631 (f)(3)) _____ Reference & Page Number

☐ Provide estimates, if available, of existing conservation savings on water use and the effect _____ Reference & Page Number

of such savings on the supplier's ability to further reduce demand (10631(f)(4))

Provided an evaluation for this DMM if it is not implemented **(Section 10631 (g))**

- ☐ Evaluate legal authority (10631 (g)(4))
- ☐ Evaluate economic and non-economic factors (10631 (g)(1))
- ☐ Evaluate environmental, social, health factors (10631 (g)(1))
- ☐ Evaluate customer impact & technological factors (10631 (g)(1))

Table J3 - 10631 (g)(2)	
Cost Effectiveness Summary	
Total Costs	
Total Benefits	
Discount Rate	
Time Horizon	
Cost of Water	
Water Savings (AFY)	

- ☐ Describe efforts to work with other relevant agencies to ensure implementation of the measure and to share the cost of implementation (10631 (g)(4))
- ☐ Describe funding available to implement any planned water supply project that would provide water at a higher unit cost (10631 (g)(3) & (h))

If Another Agency Implementing

- ☐ If another Agency is implementing (10631 (g)(4))

Agency Name

DMM 11 - Conservation Pricing (10631 (f)(1)(K))

Implementation **(Section 10631 (f) & (h))**

- [x] Describe demand management measure currently being implemented or scheduled for implementation (10631 (f) (1)(2)) — pg.7-4 Appn k — Reference & Page Number

Year program started 2005 or Year program scheduled to start

- [x] Agency provides sewer service
- [x] Describes steps necessary to implement measure — pg.7-4 Appn k — Reference & Page Number

Table K1				COMMENT
RETAILERS				
Residential				
Water Rate Structure	volumetric	Sewer Rate Structure	$1.81	
Year rate effective	2005	Year rate effective	2010	
Commercial				
Water Rate Structure	volumetric	Sewer Rate Structure	$1.81	The minimum sewer rate for all accounts is $19.00
Year rate effective	2005	Year rate effective	2010	
Industrial				
Water Rate Structure	volumetric	Sewer Rate Structure	$2.45	

Year rate effective	2005	Year rate effective	2010
Institutional/Government			
Water Rate Structure		Sewer Rate Structure	
Year rate effective		Year rate effective	
Irrigation			
Water Rate Structure			
Year rate effective			
Other			
Water Rate Structure		Sewer Rate Structure	
Year rate effective		Year rate effective	

Table K2

WHOLESALERS

Water Rate Structure	
Year rate effective	

Provided an evaluation for this DMM if it is not implemented **(Section 10631 (g))**

- ☐ Evaluate legal authority (10631 (g)(4))
- ☐ Evaluate economic and non-economic factors (10631 (g)(1))
- ☐ Evaluate environmental, social, health factors (10631 (g)(1))
- ☐ Evaluate customer impact & technological factors (10631 (g)(1))

Table K3 - 10631 (g)(2)

Cost Effectiveness Summary	
Total Costs	
Total Benefits	
Discount Rate	
Time Horizon	
Cost of Water	
Water Savings (AFY)	

- ☐ Describe efforts to work with other relevant agencies to ensure implementation of the measure and to share the cost of implementation (10631 (g)(4))
- ☐ Describe funding available to implement any planned water supply project that would provide water at a higher unit cost (10631 (g)(3) & (h))

If Another Agency Implementing

- ☐ If another Agency is implementing (10631 (g)(4))

Agency Name

DMM 12 - Water Conservation Coordinator (10631 (f)(1)(L))

Implementation **(Section 10631 (f) & (h))**

- [x] Describe demand management measure currently being implemented or scheduled for implementation (10631 (f) (1)(2))

pg.7-4 Reference & Page Number

Year program started 2005 or Year program scheduled to start

[x] Describes steps necessary to implement measure pg.7-4 Reference & Page Number

Table L1					
Actual	2001	2002	2003	2004	2005
# of full-time positions					
# of full/part-time staff					
actual expenditures - $					

Table L2					
Planned	2006	2007	2008	2009	2010
# of full-time positions					
# of full/part-time staff					
projected expenditures - $					

COMMENT

Provided an evaluation for this DMM if it is not implemented **(Section 10631 (g))**

[ ] Evaluate legal authority (10631 (g)(4))

[ ] Evaluate economic and non-economic factors (10631 (g)(1))

[ ] Evaluate environmental, social, health factors (10631 (g)(1))

[ ] Evaluate customer impact & technological factors (10631 (g)(1))

Table L3 - 10631 (g)(2)	
Cost Effectiveness Summary	
Total Costs	
Total Benefits	
Discount Rate	
Time Horizon	
Cost of Water	
Water Savings (AFY)	

[ ] Describe efforts to work with other relevant agencies to ensure implementation of the measure and to share the cost of implementation (10631 (g)(4))

[ ] Describe funding available to implement any planned water supply project that would provide water at a higher unit cost (10631 (g)(3) & (h))

If Another Agency Implementing

[ ] If another Agency is implementing (10631 (g)(4))

Agency Name

DMM 13 - Water Waste Prohibition (10631 (f)(1)(M))

Implementation **(Section 10631 (f) & (h))**

[x] Describe demand management measure currently being implemented or scheduled for implementation (10631 (f) (1)(2)) pg.7-4 Reference & Page Number

Year program started or Year program scheduled to start 2012

x Describes steps necessary to implement measure — pg.7-4 — Reference & Page Number

Table M1					
Actual	2001	2002	2003	2004	2005
waste ordinance in effect					
# of on-site visits					
water softener ordinance					
actual expenditures - $					

Table M2					
Planned	2006	2007	2008	2009	2010
waste ordinance in effect					
# of on-site visits					
water softener ordinance					
projected expenditures - $					

COMMENT

x Describe the methods, if any, used to evaluate the effectiveness of this demand management measure (10631(f)(3)) — n/a — Reference & Page Number

Provided an evaluation for this DMM if it is not implemented **(Section 10631 (g))**

- ☐ Evaluate legal authority (10631 (g)(4))
- ☐ Evaluate economic and non-economic factors (10631 (g)(1))
- ☐ Evaluate environmental, social, health factors (10631 (g)(1))
- ☐ Evaluate customer impact & technological factors (10631 (g)(1))

Table M3 - 10631 (g)(2)	
Cost Effectiveness Summary	
Total Costs	
Total Benefits	
Discount Rate	
Time Horizon	
Cost of Water	
Water Savings (AFY)	

- ☐ Describe efforts to work with other relevant agencies to ensure implementation of the measure and to share the cost of implementation (10631 (g)(4))
- ☐ Describe funding available to implement any planned water supply project that would provide water at a higher unit cost (10631 (g)(3) & (h))

If Another Agency Implementing

☐ If another Agency is implementing (10631 (g)(4))

Agency Name

DMM 14 - Residential Ultra-Low-Flush Toilet Replacement Programs (10631 (f)(1)(N))

Implementation **(Section 10631 (f) & (h))**

x Describe demand management measure currently being implemented or scheduled for implementation (10631 (f) (1)(2)) pg7-5 Reference & Page Number

Year program started 1994 or Year program scheduled to start

# of SF pre-1992 accounts 1958

x Describes steps necessary to implement measure pg7-5 Reference & Page Number

Table N1	Single-Family				
Actual	2001	2002	2003	2004	2005
# of ULF rebates					
# of ULF direct installs					
# of ULF CBO installs					
actual expenditures - $					
actual water savings - AFY					

Table N2	Single-Family				
Planned	2006	2007	2008	2009	2010
# of ULF rebates					
# of ULF direct installs					
# of ULF CBO installs					
projected expenditures - $					
projected water savings - AFY					

COMMENT

# of MF pre-1992 units 96

Table N3	Multi-Family				
Actual	2001	2002	2003	2004	2005
# of ULF rebates					
# of ULF direct installs					
# of ULF CBO installs					
actual expenditures - $					
actual water savings - AFY					

Table N4	Multi-Family				
Planned	2006	2007	2008	2009	2010
# of ULF rebates					
# of ULF direct installs					
# of ULF CBO installs					

projected expenditures - $					
projected water savings - AFY					

[x] Is a toilet retrofit on resale ordinance in effect for your service area?

[x] Provide estimates, if available, of existing conservation savings on water use and the effect of such savings on the supplier's ability to further reduce demand (10631(f)(4)) n/a Reference & Page Number

Provided an evaluation for this DMM if it is not implemented **(Section 10631 (g))**

- [ ] Evaluate legal authority (10631 (g)(4))
- [ ] Evaluate economic and non-economic factors (10631 (g)(1))
- [ ] Evaluate environmental, social, health factors (10631 (g)(1))
- [ ] Evaluate customer impact & technological factors (10631 (g)(1))

Table N5 - 10631 (g)(2)	
Cost Effectiveness Summary	
Total Costs	
Total Benefits	
Discount Rate	
Time Horizon	
Cost of Water	
Water Savings (AFY)	

- [ ] Describe efforts to work with other relevant agencies to ensure implementation of the measure and to share the cost of implementation (10631 (g)(4))
- [ ] Describe funding available to implement any planned water supply project that would provide water at a higher unit cost (10631 (g)(3) & (h))

If Another Agency Implementing

- [ ] If another Agency is implementing (10631 (g)(4))

Agency Name

2005 Urban Water Management Plan Review for Completeness Form **(Water Code §10620 (d)(1)(2) - 10645**

(Water Code §10620 (d)(1)(2) - 10645, the 2005 Urban Water Management Plan Review for Completeness Form is found on Sheet 1

Appendix S

Tulare County Water Commission Agenda 7-11-11

TULARE COUNTY WATER COMMISSION

3:00 p.m. on Monday, July 11, 2011

BOARD OF SUPERVISORS CHAMBERS
ADMINISTRATION BUILDING
2800 W. BURREL AVE.
VISALIA, CALIFORNIA 93291

NOTICE TO THE PUBLIC
PUBLIC COMMENT PERIOD

At this time, members of the public may comment on any item not appearing on the agenda. Under state law, matters presented under this item cannot be discussed or acted upon by the Water Commission at this time. For items appearing on the agenda, the public is invited to make comments at the time the item comes up for the Water Commission's consideration. Any person addressing the Water Commission will be limited to a maximum of three (3) minutes so that all interested parties have an opportunity to speak. At all times, please use the microphone and state your name and address for the record.

AGENDA

1. Call to Order
2. Public comment period
3. Approval of minutes from June 13, 2011 meetings
4. Presentation from Quad Knopf on City of Exeter's Urban Water Management Plan
5. Presentation from Friant Water Authority on Draft Program Environmental Impact Statement-San Joaquin River Restoration
6. Subcommittee reports
7. Commissioners comments
8. Next meeting – Monday, August 8, 2011, 3:00 p.m. – Board of Supervisors Chambers
9. Adjourn

Tulare County Water Commission Contact: Denise Akins, staff (559) 636-5005

As a courtesy to those in attendance, please turn off or place in alert mode all cell phones and pagers.

In compliance with the Americans with Disabilities Act, if you need special assistance to participate in this meeting, please contact the Clerk of the Board's Office at (559) 636-5000

Appendix T

UWMP Checklist

Table I-2 Urban Water Management Plan checklist, organized by subject

No.	UWMP requirement [a]	Calif. Water Code reference	Additional clarification	UWMP location
PLAN PREPARATION				
4	Coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.	10620(d)(2)		
6	Notify, at least 60 days prior to the public hearing on the plan required by Section 10642, any city or county within which the supplier provides water that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan. Any city or county receiving the notice may be consulted and provide comments.	10621(b)		
7	Provide supporting documentation that the UWMP or any amendments to, or changes in, have been adopted as described in Section 10640 et seq.	10621(c)		
54	Provide supporting documentation that the urban water management plan has been or will be provided to any city or county within which it provides water, no later than 60 days after the submission of this urban water management plan.	10635(b)		
55	Provide supporting documentation that the water supplier has encouraged active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan.	10642		
56	Provide supporting documentation that the urban water supplier made the plan available for public inspection and held a public hearing about the plan. For public agencies, the hearing notice is to be provided pursuant to Section 6066 of the Government Code. The water supplier is to provide the time and place of the hearing to any city or county within which the supplier provides water. Privately-owned water suppliers shall provide an equivalent notice within its service area.	10642		
57	Provide supporting documentation that the plan has been adopted as prepared or modified.	10642		
58	Provide supporting documentation as to how the water supplier plans to implement its plan.	10643		

No.	UWMP requirement [a]	Calif. Water Code reference	Additional clarification	UWMP location
59	Provide supporting documentation that, in addition to submittal to DWR, the urban water supplier has submitted this UWMP to the California State Library and any city or county within which the supplier provides water supplies a copy of its plan no later than 30 days after adoption. This also includes amendments or changes.	10644(a)		
60	Provide supporting documentation that, not later than 30 days after filing a copy of its plan with the department, the urban water supplier has or will make the plan available for public review during normal business hours	10645		
SYSTEM DESCRIPTION				
8	Describe the water supplier service area.	10631(a)		
9	Describe the climate and other demographic factors of the service area of the supplier	10631(a)		
10	Indicate the current population of the service area	10631(a)	Provide the most recent population data possible. Use the method described in "Baseline Daily Per Capita Water Use." See Section M.	
11	Provide population projections for 2015, 2020, 2025, and 2030, based on data from State, regional, or local service area population projections.	10631(a)	2035 and 2040 can also be provided to support consistency with Water Supply Assessments and Written Verification of Water Supply documents.	
12	Describe other demographic factors affecting the supplier's water management planning.	10631(a)		
SYSTEM DEMANDS				
1	Provide baseline daily per capita water use, urban water use target, interim urban water use target, and compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data.	10608.20(e)		
2	*Wholesalers:* Include an assessment of present and proposed future measures, programs, and policies to help achieve the water use reductions. *Retailers:* Conduct at least one public hearing that includes general discussion of the urban retail water supplier's implementation plan for complying with the Water Conservation Bill of 2009.	10608.36 10608.26(a)	Retailers and wholesalers have slightly different requirements	

No.	UWMP requirement [a]	Calif. Water Code reference	Additional clarification	UWMP location
3	Report progress in meeting urban water use targets using the standardized form.	10608.40		
25	Quantify past, current, and projected water use, identifying the uses among water use sectors, for the following: (A) single-family residential, (B) multifamily, (C) commercial, (D) industrial, (E) institutional and governmental, (F) landscape, (G) sales to other agencies, (H) saline water intrusion barriers, groundwater recharge, conjunctive use, and (I) agriculture.	10631(e)(1)	Consider 'past' to be 2005, present to be 2010, and projected to be 2015, 2020, 2025, and 2030. Provide numbers for each category for each of these years.	
33	Provide documentation that either the retail agency provided the wholesale agency with water use projections for at least 20 years, if the UWMP agency is a retail agency, OR, if a wholesale agency, it provided its urban retail customers with future planned and existing water source available to it from the wholesale agency during the required water-year types	10631(k)	Average year, single dry year, multiple dry years for 2015, 2020, 2025, and 2030.	
34	Include projected water use for single-family and multifamily residential housing needed for lower income households, as identified in the housing element of any city, county, or city and county in the service area of the supplier.	10631.1(a)		
SYSTEM SUPPLIES				
13	Identify and quantify the existing and planned sources of water available for 2015, 2020, 2025, and 2030.	10631(b)	The 'existing' water sources should be for the same year as the "current population" in line 10. 2035 and 2040 can also be provided.	
14	Indicate whether groundwater is an existing or planned source of water available to the supplier. If yes, then complete 15 through 21 of the UWMP Checklist. If no, then indicate "not applicable" in lines 15 through 21 under the UWMP location column.	10631(b)	Source classifications are: surface water, groundwater, recycled water, storm water, desalinated sea water, desalinated brackish groundwater, and other.	
15	Indicate whether a groundwater management plan been adopted by the water supplier or if there is any other specific authorization for groundwater management. Include a copy of the plan or authorization.	10631(b)(1)		
16	Describe the groundwater basin.	10631(b)(2)		
17	Indicate whether the groundwater basin is adjudicated? Include a copy of the court order or decree.	10631(b)(2)		

No.	UWMP requirement [a]	Calif. Water Code reference	Additional clarification	UWMP location
18	Describe the amount of groundwater the urban water supplier has the legal right to pump under the order or decree. If the basin is not adjudicated, indicate “not applicable” in the UWMP location column.	10631(b)(2)		
19	For groundwater basins that are not adjudicated, provide information as to whether DWR has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most current official departmental bulletin that characterizes the condition of the groundwater basin, and a detailed description of the efforts being undertaken by the urban water supplier to eliminate the long-term overdraft condition. If the basin is adjudicated, indicate “not applicable” in the UWMP location column.	10631(b)(2)		
20	Provide a detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years	10631(b)(3)		
21	Provide a detailed description and analysis of the amount and location of groundwater that is projected to be pumped.	10631(b)(4)	Provide projections for 2015, 2020, 2025, and 2030.	
24	Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.	10631(d)		
30	Include a detailed description of all water supply projects and programs that may be undertaken by the water supplier to address water supply reliability in average, single-dry, and multiple-dry years, excluding demand management programs addressed in (f)(1). Include specific projects, describe water supply impacts, and provide a timeline for each project.	10631(h)		
31	Describe desalinated water project opportunities for long-term supply, including, but not limited to, ocean water, brackish water, and groundwater.	10631(i)		
44	Provide information on recycled water and its potential for use as a water source in the service area of the urban water supplier. Coordinate with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area.	10633		
45	Describe the wastewater collection and treatment systems in the supplier's service area, including a quantification of the amount of wastewater collected and treated and the methods of wastewater disposal.	10633(a)		

No.	UWMP requirement [a]	Calif. Water Code reference	Additional clarification	UWMP location
46	Describe the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.	10633(b)		
47	Describe the recycled water currently being used in the supplier's service area, including, but not limited to, the type, place, and quantity of use.	10633(c)		
48	Describe and quantify the potential uses of recycled water, including, but not limited to, agricultural irrigation, landscape irrigation, wildlife habitat enhancement, wetlands, industrial reuse, groundwater recharge, indirect potable reuse, and other appropriate uses, and a determination with regard to the technical and economic feasibility of serving those uses.	10633(d)		
49	The projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years, and a description of the actual use of recycled water in comparison to uses previously projected.	10633(e)		
50	Describe the actions, including financial incentives, which may be taken to encourage the use of recycled water, and the projected results of these actions in terms of acre-feet of recycled water used per year.	10633(f)		
51	Provide a plan for optimizing the use of recycled water in the supplier's service area, including actions to facilitate the installation of dual distribution systems, to promote recirculating uses, to facilitate the increased use of treated wastewater that meets recycled water standards, and to overcome any obstacles to achieving that increased use.	10633(g)		
WATER SHORTAGE RELIABILITY AND WATER SHORTAGE CONTINGENCY PLANNING [b]				
5	Describe water management tools and options to maximize resources and minimize the need to import water from other regions.	10620(f)		
22	Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage and provide data for (A) an average water year, (B) a single dry water year, and (C) multiple dry water years.	10631(c)(1)		
23	For any water source that may not be available at a consistent level of use - given specific legal, environmental, water quality, or climatic factors - describe plans to supplement or replace that source with alternative sources or water demand management measures, to the extent practicable.	10631(c)(2)		
35	Provide an urban water shortage contingency analysis that specifies stages of action, including up to a 50-percent water supply reduction, and an outline of specific water supply conditions at each stage	10632(a)		

No.	UWMP requirement [a]	Calif. Water Code reference	Additional clarification	UWMP location
36	Provide an estimate of the minimum water supply available during each of the next three water years based on the driest three-year historic sequence for the agency's water supply.	10632(b)		
37	Identify actions to be undertaken by the urban water supplier to prepare for, and implement during, a catastrophic interruption of water supplies including, but not limited to, a regional power outage, an earthquake, or other disaster.	10632(c)		
38	Identify additional, mandatory prohibitions against specific water use practices during water shortages, including, but not limited to, prohibiting the use of potable water for street cleaning.	10632(d)		
39	Specify consumption reduction methods in the most restrictive stages. Each urban water supplier may use any type of consumption reduction methods in its water shortage contingency analysis that would reduce water use, are appropriate for its area, and have the ability to achieve a water use reduction consistent with up to a 50 percent reduction in water supply.	10632(e)		
40	Indicated penalties or charges for excessive use, where applicable.	10632(f)		
41	Provide an analysis of the impacts of each of the actions and conditions described in subdivisions (a) to (f), inclusive, on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts, such as the development of reserves and rate adjustments.	10632(g)		
42	Provide a draft water shortage contingency resolution or ordinance.	10632(h)		
43	Indicate a mechanism for determining actual reductions in water use pursuant to the urban water shortage contingency analysis.	10632(i)		
52	Provide information, to the extent practicable, relating to the quality of existing sources of water available to the supplier over the same five-year increments, and the manner in which water quality affects water management strategies and supply reliability	10634	For years 2010, 2015, 2020, 2025, and 2030	

No.	UWMP requirement [a]	Calif. Water Code reference	Additional clarification	UWMP location
53	Assess the water supply reliability during normal, dry, and multiple dry water years by comparing the total water supply sources available to the water supplier with the total projected water use over the next 20 years, in five-year increments, for a normal water year, a single dry water year, and multiple dry water years. Base the assessment on the information compiled under Section 10631, including available data from state, regional, or local agency population projections within the service area of the urban water supplier.	10635(a)		
DEMAND MANAGEMENT MEASURES				
26	Describe how each water demand management measures is being implemented or scheduled for implementation. Use the list provided.	10631(f)(1)	Discuss each DMM, even if it is not currently or planned for implementation. Provide any appropriate schedules.	
27	Describe the methods the supplier uses to evaluate the effectiveness of DMMs implemented or described in the UWMP.	10631(f)(3)		
28	Provide an estimate, if available, of existing conservation savings on water use within the supplier's service area, and the effect of the savings on the ability to further reduce demand.	10631(f)(4)		
29	Evaluate each water demand management measure that is not currently being implemented or scheduled for implementation. The evaluation should include economic and non-economic factors, cost-benefit analysis, available funding, and the water suppliers' legal authority to implement the work.	10631(g)	See 10631(g) for additional wording.	
32	Include the annual reports submitted to meet the Section 6.2 requirements, if a member of the CUWCC and signer of the December 10, 2008 MOU.	10631(j)	Signers of the MOU that submit the annual reports are deemed compliant with Items 28 and 29.	

a The UWMP Requirement descriptions are general summaries of what is provided in the legislation. Urban water suppliers should review the exact legislative wording prior to submitting its UWMP.

b The Subject classification is provided for clarification only. It is aligned with the organization presented in Part I of this guidebook. A water supplier is free to address the UWMP Requirement anywhere with its UWMP, but is urged to provide clarification to DWR to facilitate review.